



Draft decision – Public

Jemena

**Access arrangement proposal for the NSW gas
networks**

1 July 2010 – 30 June 2015

February 2010

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Request for submissions

This document sets out the Australian Energy Regulator's (AER) draft decision for Jemena Gas Network (NSW) Ltd's (Jemena) access arrangement proposal for the period 1 July 2010 to 30 June 2015.

The AER will hold a forum on its draft decision for Jemena on 24 February 2010 in Sydney. This forum will be used by the AER to explain its draft decision to interested parties.

Jemena must submit a revised access arrangement revision proposal responding to the AER's draft decision by 19 March 2010.

Interested parties are invited to make written submissions on issues regarding the draft decision and the consultants' reports to the AER by 28 April 2010. The AER will consider all information it receives in the access arrangement review process, including submissions on the draft decision.

Submissions can be sent electronically to nswactgas@aer.gov.au.

Alternatively, submissions can be mailed to:

Mike Buckley
General Manager – Network Regulation North
Australian Energy Regulator
GPO Box 3131
Canberra ACT 2601.

The AER prefers that all submissions be made public to facilitate an informed and transparent consultative process. Submissions should be made with reference to the AER's Access arrangement guideline (AAG) and the ACCC–AER information policy: the collection, use and disclosure of information (ACCC–AER Information Policy).¹ These documents are available at www.aer.gov.au. Submissions will be treated as public documents unless otherwise requested. Parties wishing to submit confidential information are requested to submit this information as outlined in the AAG.

All non-confidential submissions will be placed on the AER's website.

Copies of Jemena's access arrangement proposal, relevant consultant reports and other relevant material are available on the AER's website.

Inquiries about this draft decision or how to make submissions can be made by email to nswactgas@aer.gov.au or by phone on (02) 6243 1233.

¹ ACCC and AER, *ACCC–AER information policy: the collection, use and disclosure of information*, 23 October 2008.

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Draft decision

The Australian Energy Regulator does not propose to approve Jemena's access arrangement proposal as it is not satisfied that it meets the National Gas Rules' requirements.² The draft decision sets out the detailed reasons for this decision.³

This decision also outlines the amendments (or nature of amendments)⁴ required to be made to the access arrangement proposal⁵ or the access arrangement information⁶ for the Australian Energy Regulator to approve the access arrangement proposal.

Elements of the access arrangement proposal that do not require amendment are consistent with the national gas objective.⁷

2 NGR, r. 41 and r. 100.

3 NGR, r. 59(4).

4 NGR, r. 43(3) and r. 59(2).

5 Jemena, *Access arrangement proposal*, August 2009.

6 Jemena, *Access arrangement information*, August 2009.

7 NGR, r. 100.

Amendments

Before the proposed access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 2.1: amend the access arrangement proposal to delete the definition of 'Reference Service' in clause 1.1 of Schedule 3 and replace it with the following:

Reference Service means the Ancillary Reference Services, the Legacy Services, the Haulage Reference Service, and, until the Meter Data Service Date, the Meter Data Service;

Amendment 2.2: amend the access arrangement proposal to delete the definition of 'Reference Service' in clause 1.1 of Schedule 1 and replace it with the following:

Reference Service means:

- (a) the Ancillary Reference Services; or
- (b) the Haulage Reference Service; or
- (c) Legacy Services; or
- (d) the Meter Data Service.

Amendment 2.3: amend the access arrangement proposal to include the following in clause 1.1 of Schedule 3:

Ancillary Reference Service means the ancillary services described at H of Schedule 2 to the Access Arrangement.

Amendment 2.4: amend the access arrangement proposal and the access arrangement information to reflect amendments 2.1–2.3.

Amendment 2.5: amend the access arrangement proposal and the access arrangement information to specify the other terms and conditions on which the legacy services will be provided.

Amendment 2.6: amend the access arrangement proposal to include the following in section 1.1 of Schedule 1:

Legacy Service Agreement means an agreement between the Service Provider and the User for the provision of a Legacy Service.

Amendment 3.1: amend the access arrangement information to delete Table 8.3 and replace it with the following:

Table 3.14: Inflation rates for adjusting the capital base (%)

	2005–06	2006–07	2007–08	2008–09	2009–10
Inflation rates	2.80	3.25	2.96	3.69	1.50

Amendment 3.2: amend the access arrangement information to:

- delete Table 8.4 and replace it with the following:

Table 3.15: Roll forward of combined total capital base over earlier AA period 2005–06 to 2009–10 (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10
Opening capital base	1945.3	2016.7	2116.1	2202.9	2246.2
Asset redundancies	2.1	0.0	0.0	0.0	0.0
Net capital expenditure	77.3	112.5	89.0	93.7	110.2
Depreciation	67.4	73.9	80.5	83.6	78.5
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	1953.2	2055.3	2124.6	2213.0	2277.9

- delete Table 8.5 and replace it with the following:

Table 3.16: Roll forward of Wilton to Wollongong trunk pipeline capital base over earlier AA period 2005–06 to 2009–10 (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10
Opening capital base	10.5	8.5	8.6	8.7	8.6
Asset redundancies	2.1	0.0	0.0	0.0	0.0
Net capital expenditure	0.0	0.0	0.0	0.0	0.0
Depreciation	0.2	0.2	0.2	0.2	0.2
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	8.2	8.3	8.4	8.5	8.5

- delete Table 8.6 and replace it with the following:

Table 3.17: Roll forward of Wilton to Newcastle trunk pipeline capital base over earlier AA period (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10
Opening capital base	122.8	124.3	125.4	127.4	126.6
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	0.0	0.0	0.0	0.0	0.5
Depreciation	2.4	2.5	2.5	2.7	2.7
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	120.4	121.8	122.9	124.8	124.4

- delete Table 8.7 and replace it with the following:

Table 3.18: Roll forward of NSW distribution system capital base over the earlier AA period 2005–06 to 2009–10 (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10
Opening capital base	1812.0	1883.9	1982.1	2066.8	2111.0
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	77.3	112.5	89.0	93.7	109.7
Depreciation	64.8	71.3	77.7	80.7	75.6
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	1824.6	1925.1	1993.3	2079.8	2145.1

Amendment 3.3: amend the access arrangement information to:

- delete Table 7.1 and replace it with the following:

Table 3.19: Forecast capital expenditure over the next AA period 2010–11 to 2014–15 (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Total capital expenditure	110.6	114.1	114.0	119.9	117.3	575.9

- delete Table 7.6 and replace it with the following:

Table 3.20: Forecast capital expenditure over next AA period 2010–11 to 2014–15 (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Market expansion	57.0	68.3	73.2	68.8	64.9	332.2
System reinforcement / renewal / replacement	33.2	29.9	27.5	27.9	28.4	146.9
Non-system assets	20.4	15.9	13.3	23.2	24.0	96.8
Total capital expenditure	110.6	114.1	114.0	119.9	117.3	575.9

Amendment 3.4: amend the access arrangement information to:

- delete Table 10.1. and replace it with the following:

Table 3.21: Forecast depreciation over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Total depreciation	88.2	96.7	104.9	112.1	122.0	523.8

- delete Table 10.4 and replace it with the following:

Table 3.22: Forecast depreciation over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Wilton/Wollongong	0.2	0.2	0.2	0.2	0.2	1.1
Wilton/Newcastle	2.7	2.8	2.9	2.9	3.0	14.3
Distribution network	85.2	93.7	101.8	108.9	118.7	508.4
Total	88.2	96.7	104.9	112.1	122.0	523.8

Amendment 3.5: amend the access arrangement information to:

- delete Table 8.8 and replace it with the following:

Table 3.23: Roll forward of combined total capital base over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	2332.8	2409.0	2483.2	2556.6	2634.3
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	106.2	111.1	116.7	126.3	126.5
Depreciation	88.2	96.7	104.9	112.1	122.0
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	2350.9	2423.4	2495.0	2570.8	2638.9

- delete Table 8.9 and replace it with the following:

Table 3.24: Roll forward of Wilton to Wollongong capital base over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	8.7	8.7	8.7	8.7	8.6
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	0.0	0.0	0.0	0.0	0.0
Depreciation	0.2	0.2	0.2	0.2	0.2
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	8.5	8.5	8.4	8.4	8.4

- delete Table 8.10 and replace it with the following:

Table 3.25: Roll forward of Wilton to Newcastle trunk pipeline capital base over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	127.5	128.8	130.0	131.1	132.8
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	0.9	0.8	0.8	1.4	1.4
Depreciation	2.7	2.8	2.9	2.9	3.0
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	125.7	126.8	127.9	129.6	131.1

- delete Table 8.11 and replace it with the following:

Table 3.26: Roll forward of NSW distribution system capital base over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	2196.7	2271.5	2344.6	2416.9	2492.9
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	105.3	110.2	115.9	124.9	125.1
Depreciation	85.2	93.7	101.8	108.9	118.7
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	2216.8	2288.1	2358.6	2432.8	2499.3

Amendment 3.6: delete clauses 5(a) and 5(b) in the access arrangement proposal and clause 8.8 in the access arrangement information.

Amendment 4.1: amend the access arrangement information to delete Table 10.2 in the access arrangement information and replace it with the following:

Asset Category	Economic life (years)	Remaining life (years)
System assets		
Trunk Wilton–Sydney	80	45.0
Trunk Sydney–Newcastle	80	49.1
Trunk Wilton–Wollongong	80	41.7
Contract Meters	20	8.9
Fixed Plant –Distribution	50	37.0
HP Mains	80	57.2
HP Services	50	25.5
MP Mains	50	28.1
MP Services	50	34.9
Meter Reading Devices	20	19.0
Country POTS	50	34.7
Tariff Meters	20	10.3
Non-system assets		
Building	48	20.9
Computers	5	0.0
Software	5	3.3
Fixed Plant	10	9.0
Furniture	10	0.0
Land	–	0.0
Leasehold Improvements	10	8.0
Low Value Assets	10	0.0
Mobile Plant	10	5.1
Vehicles	4	2.0

Amendment 4.2: amend the access arrangement information to replace the column headed ‘Remaining Asset Life’ of Table 10.3 with the following:

	Remaining asset life (years)
Trunk pipeline (Wilton–Sydney)	45.0
Trunk Pipeline (Sydney–Newcastle)	49.1
Trunk pipeline (Wilton–Wollongong)	41.7
Distribution system	
County POTS	34.7
Contract meters	8.9
Tariff meters	10.3
Meter reading devices	19.0
Fixed plant	37.0
HP mains	57.2
MP mains	28.1
HP Services	25.5
MP services	34.9

Amendment 5.1: amend the access arrangement information to delete Tables 9-1 and 9-4 and replace them with the following:

Table 5.7: WACC parameters

Parameter	AER's draft decision
Nominal risk-free rate (%)	5.52 ^a
Inflation (%)	2.47 ^b
Real risk-free rate (%)	2.98 ^a
Equity beta	0.80
Market risk premium (%)	6.50
Debt risk premium (%)	4.32 ^a
Debt to total assets (gearing) (%)	60
Nominal return on equity (%)	10.72 ^a
Nominal return on debt (%)	9.84
Nominal vanilla WACC (%)	10.19 ^a
Gamma (utilisation of imputation credits)	0.65 ^c

a: These figures have been updated with data current to 23 December 2009, but should be considered indicative only. They will be updated by the AER for the final decision (in accordance with the averaging period set out in confidential Appendix B).

b: This figure will be updated by the AER for the final decision using the latest data from the RBA statement of monetary policy.

c: Gamma (utilisation of imputation credits) is considered in taxation chapter 6.

Amendment 5.2: make all consequential amendments necessary in the access arrangement information to take account of, and reflect, amendment 5.1.

Amendment 6.1: amend the access arrangement information to delete the third, fourth and fifth paragraphs from section 9.4 and replace them with the following:

JGN determines its building block revenue requirement using a post-taxation approach. It is therefore necessary to itemise "the estimated cost of corporate income taxation for [each] year" as a separate revenue building block consistent with rule 76(c).

Amendment 6.2: amend the access arrangement information to include a discussion of the estimation of the taxation building block, i.e. using a post-taxation framework in section 9.4, and include a reference to appendix 9.3 of the access arrangement information.

Amendment 6.3: amend the access arrangement information to delete section 9.6.1 and replace it with the following:

JGN proposes using a nominal vanilla WACC as follows:

$$\text{WACC} = R_d^n \times \frac{D}{V} + R_e^n \times \frac{E}{V}$$

where:

R_d^n is the nominal return on debt

R_e^n is the nominal return on equity

D is total debt

E is total equity

V is $(D + E)$, i.e. total debt plus total equity.

Amendment 6.4: amend the access arrangement information to delete section 9.7.8.

Amendment 6.5: amend the access arrangement information to change the title of appendix 9.3 to "Taxation asset base".

Amendment 6.6: amend the access arrangement information to delete section 1 and the introduction to section 2 in appendix 9.3.

Amendment 6.7: amend the access arrangement information to delete the third dot point in section 2.2 in appendix 9.3 and replace it with the following:

to determine the taxation written down value of each asset and hence the opening TAB for the regulatory capital base assets as at 1 July 1999. Where the taxation regime offered the option of prime cost (historic cost straight line) or diminishing value depreciation, JGN has used the prime cost method. The prime cost method was used to ensure consistency with approaches to taxation in past access arrangement periods.

Amendment 6.8: amend the access arrangement information to delete Table 2-1 in appendix 9.3 and replace it with the following, after calculating the initial taxation life and remaining taxation life:

Table 2-1: JGN's opening TAB as at 1 July 1999 (\$nominal)

Asset Class	Initial cost	Initial taxation life (years)	Remaining taxation life (years)	Cumulative taxation depreciation to 1 July 1999	TAB 30 June 1999
Trunk Wilton–Sydney	65.5			65.3	0.2
Trunk Sydney–Newcastle	84.0			77.3	6.7
Trunk Wilton–Wollongong	13.2			13.2	0.0
Contract meters	9.1			4.5	4.6
Fixed plant – distribution	23.0			20.0	3.0
High pressure mains	239.4			201.6	37.8
High pressure services	3.7			2.7	1.0
Medium pressure mains	1143.8			739.0	404.8
Medium pressure services	348.0			199.8	148.3
Meter reading devices	1.1			0.5	0.6
Country POTS	4.2			2.5	1.8
Tariff meters	115.2			60.7	54.5
Building	4.1			0.5	3.7
Computers	16.5			4.3	12.2
Software	28.9			20.1	8.7
Fixed plant	19.9			13.2	6.7
Furniture	7.1			5.0	2.1
Land	4.8			0.0	4.8
Leasehold improvements	5.6			0.1	5.5

Low value assets	0.0	0.0	0.0
Mobile plant	5.5	3.5	2.0
Vehicles	15.0	9.2	5.8
Current building	1.0	0.5	0.5
Current land	1.7	0.0	1.7
Total	2160.3	1443.4	716.9

Amendment 6.9: amend the access arrangement information to delete Table 2-2 in appendix 9.3 and replace it with the following:

Table 2-2: TAB roll forward from 1999–2010 (\$nominal)

Asset Class	TAB 1 July 1999	Depreciation	Net Expenditure	TAB 30 June 2010
Trunk Wilton–Sydney	0.2	0.2	0.1	0.1
Trunk Sydney–Newcastle	6.7	6.7	0.3	0.3
Trunk Wilton–Wollongong	0.0	0.0	0.0	0.0
Contract meters	4.6	7.2	7.2	4.6
Fixed plant – distribution	3.0	6.8	19.2	15.5
High pressure mains	37.8	44.5	32.3	25.5
High pressure services	1.0	1.1	0.3	0.2
Medium pressure mains	404.8	439.5	105.1	70.4
Medium pressure services	148.3	203.2	167.1	112.2
Meter reading devices	0.6	1.8	3.4	2.2
Country POTS	1.8	2.0	2.6	2.4
Tariff meters	54.5	89.3	118.3	83.6
Building	4.2	1.2	–0.4	2.5
Computers	12.2	13.5	1.4	0.0
Software	8.7	15.9	13.4	6.2
Fixed plant	6.7	10.2	5.0	1.5
Furniture	2.1	2.3	0.1	0.0

Land	6.4	0.0	-1.9	4.6
Leasehold improvements	5.5	1.9	1.3	5.0
Low value assets	0.0	0.1	0.1	0.0
Mobile plant	2.0	2.5	1.0	0.5
Vehicles	5.8	20.8	16.5	1.5
Total	716.9	870.6	492.5	338.7

Amendment 6.10: amend the access arrangement information to delete Table 2-3 in appendix 9.3 and replace it with the following:

Table 2-3: TAB roll forward from 2011–15 (\$nominal)

Asset Class	TAB 1 July 2010	Depreciation	Net Expenditure	TAB 30 June 2015
Trunk Wilton–Sydney	0.1	0.5	2.6	2.2
Trunk Sydney–Newcastle	0.3	0.6	2.7	2.4
Trunk Wilton–Wollongong	0.0	0.0	0.0	0.0
Contract meters	4.6	2.0	0.8	3.3
Fixed plant – distribution	15.5	8.8	12.7	19.4
High pressure mains	25.5	15.7	21.9	31.8
High pressure services	0.2	0.2	0.6	0.6
Medium pressure mains	70.4	46.5	97.1	121.0
Medium pressure services	112.2	81.3	192.9	223.8
Meter reading devices	2.2	1.1	1.4	2.4
Country POTS	2.4	2.0	6.0	6.4
Tariff meters	83.6	61.9	160.2	181.9
Building	2.5	0.3	0.0	2.2
Computers	0.0	0.0	0.0	0.0
Software	6.2	27.3	89.9	68.8
Fixed plant	1.5	1.8	1.9	1.7
Furniture	0.0	0.0	0.0	0.0

Land	4.6	0.0	0.0	4.6
Leasehold improvements	5.0	0.6	0.0	4.4
Low value assets	0.0	0.0	0.0	0.0
Mobile plant	0.5	0.5	0.6	0.6
Vehicles	1.5	3.4	8.7	6.8
Total	338.7	254.4	600.1	684.5

Amendment 6.11: amend the access arrangement information to delete Table 2-4 in appendix 9.3 and replace it with the following:

Table 2-4: Roll forward of TAB from 2011-15 (\$nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening balance	338.7	402.9	468.8	535.5	610.2
Add net capital expenditure	109.0	116.1	118.7	128.1	128.2
Less depreciation	44.9	50.1	52.0	53.4	54.0
Closing balance	402.9	468.8	535.5	610.2	684.5

Amendment 6.12: amend the access arrangement information to delete all references to a gamma value of 0.2 and replace them with 0.65.

Amendment 6.13: make all consequential amendments necessary to take account of and reflect amendments 6.1 to 6.12 including updating modelling inputs and calculations.

Amendment 7.1: amend the access arrangement proposal to delete section 4.2 titled 'Expansion incentive mechanism'.

Amendment 7.2: amend the access arrangement information to:

- delete the fourth bullet point in the introduction to chapter 11
- delete the second paragraph in section 11.1
- delete section 11.4
- delete and replace the term 'Section 11.4' with 'N/A' in Table 11-1.

Amendment 8.1: amend the access arrangement proposal to delete clauses 10.2 and 10.3.

Amendment 9.1: amend the access arrangement information to delete Table 6-4 and replace it with the following:

Table 9.11: Opex escalation factors for JGN (per cent, real)

	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
EBA EGW labour	2.1	0.1	0.5	1.1	1.5	1.4
Contract labour	2.1	0.1	0.5	1.1	1.5	1.4
Aluminium	–4.9	30.0	16.2	6.6	2.5	–2.4
Steel	–27.7	34.6	20.9	5.1	1.0	–1.0
Polyethylene	0.0	0.0	0.0	0.0	0.0	0.0
Concrete	0.0	0.0	0.0	0.0	0.0	0.0

Amendment 9.2: amend the access arrangement information to delete the section titled ‘Carbon scheme’ on page 83.

Amendment 9.3: amend the access arrangement information and access arrangement proposal to apply the escalation rates given in amendment 9.1 to the operating expenditure categories in the following proportions:

Table 9.12: Application of real cost escalators to operating expenditure categories (%)

	EBA labour	Contract labour	Concrete	Other non-labour
JAM operating expenditure				
Direct JAM costs	63.7	33.8	2.5	0.0
Other direct JAM costs	63.7	33.8	2.5	0.0
Site remediation	0.0	0.0	0.0	0.0
Indirect JAM costs	0.0	0.0	0.0	0.0
JGN ESF costs (via JAM)	0.0	100.0	0.0	0.0
IT	0.0	100.0	0.0	0.0
Jemena operating expenditure				
Direct JGN costs	0.0	100.0	0.0	0.0
Commercial group costs	0.0	100.0	0.0	0.0
JGN ESF costs direct to JGN	0.0	100.0	0.0	0.0

Amendment 9.4: amend the access arrangement information to delete Tables 6-1, 6-6 and 6-12 and replace them with the following:

Table 9.13: Jemena's forecast operating expenditure (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Controllable costs						
Operating and maintenance (including items transferred from proposed capex)	72.5	74.8	76.8	77.9	78.5	380.5
Administration and overheads	21.8	21.9	22.1	22.4	22.7	111.0
Marketing	6.5	6.5	6.5	6.5	6.5	32.5
Sub total	100.8	103.1	105.4	106.8	107.8	523.9
Non-controllable costs						
Government levies	3.1	3.1	3.1	3.1	3.1	15.5
Unaccounted for gas	13.1	13.2	13.3	13.5	13.7	66.6
Carbon costs	0.0	0.0	0.0	0.0	0.0	0.0
Self insurance costs	0.0	0.0	0.0	0.0	0.0	0.0
Debt raising costs	1.3	1.3	1.3	1.3	1.3	6.4
Sub total	17.4	17.5	17.7	17.8	18.0	88.5
Total operating expenditure	118.2	120.7	123.1	124.7	125.8	612.5

Note: Jemena categorises its forecast operating expenditure into the major categories of operating and maintenance and non-operating and maintenance costs. The AER has classified Jemena's forecast operating expenditure into the major categories of controllable and non-controllable costs.

Amendment 9.5: amend the access arrangement proposal to delete section 1.2 *Emissions measurement and permit costs* of schedule 8.

Amendment 9.6: amend the access arrangement information to delete section 6.6.1 *Site remediation works (Confidential)*.

Amendment 9.7: amend the access arrangement proposal to include a new section:

Statement of costs

For each 12 month period ending on 30 June during the Access Arrangement Period, Jemena must maintain records for:

- (a) Operating & Maintenance Opex—any costs paid by Jemena to Jemena Asset Management Pty Ltd (JAM) in relation to services provided under their asset management agreement (or any other replacement asset management services agreement); and

(b) Non Operating & Maintenance Opex—any costs directly incurred by Jemena in relation to providing pipeline services and not included in operating and maintenance opex. For example, without limitation, administration & overheads, government levies, marketing, unaccounted for gas, carbon costs, and insurance.

An indicative breakdown of these fees and costs and the information to be maintained for each item is set out in Schedule 10. Jemena must provide this information for the fees and costs to the Relevant Regulator as part of its proposed revisions to this Access Arrangement under clause 1.6 of the Access Arrangement.

Further, for each 12 month period ending on 30 June during the Access Arrangement Period, Jemena must also maintain:

(a) Details of JAM’s efficiency targets for the period as set out in the Asset Management Plan;

(b) Details of actual costs achieved against budgets set at the commencement of the relevant period;

(c) Details of any JAM cost overruns that were authorised by Jemena during the period as being efficient, including the amount of the overrun and an explanation as to why it was authorised;

(d) Details of JAM’s performance in regards to the risk & benefit sharing mechanism (RBSM) during the period, including service level performance against the pre determined threshold; and

(e) The basis upon which the performance margin for JAM was calculated and applied for the period.

Jemena must provide this information to the Relevant Regulator as part of its proposed revisions to this Access Arrangement under clause 1.6 of the Access Arrangement.

Amendment 9.8: amend the access arrangement proposal to include a new schedule 10, which will set out the information contained in Appendix D of the draft decision.

Amendment 10.1: amend the access arrangement information to delete Table 12.1 and replace it with the following:

Table 10.3: Forecast total revenue requirements for the access arrangement (\$m, real, 2009–10, unless otherwise stated)

	2010–11	2011–12	2012–13	2013–14	2014–15
Return on capital	231.6	233.5	234.9	236.3	237.5
Depreciation	29.9	35.5	40.6	44.4	50.4
Operating and maintenance	118.2	120.7	123.1	124.7	125.8
Corporate income taxation	10.3	10.8	11.1	11.6	12.4
Incentive mechanism payments	na	na	na	na	na
Total	390.0	400.4	409.7	417.0	426.1
X factor tariff revenue (%) ^a					
Haulage reference service (%)	-1.23 ^b	-1.96	-1.96	-1.96	-1.96
Ancillary fees (%)	0.0	0.0	0.0	0.0	0.0
Meter data service (%)	-42.49	0.0	0.0	0.0	0.0

a: Negative values for X indicate real price increases under the CPI-X formula.

b: X factor is P0 for the volume haulage reference service.

Amendment 11.1: amend the access arrangement information to delete Table 5-11 and replace it with the following:

June years	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Total load (TJ)							
Residential	23 041	21 381	22 073	22 650	23 354	23 809	24 146
Business	11 946	12 850	12 894	13 214	13 450	13 752	14 029
Total volume customers	34 987	34 231	34 967	35 864	36 804	37 561	38 175
Demand	65 618	65 409	65 870	66 330	66 791	67 252	67 713

Customers							
Total load	100 605	99 640	100 837	102 194	103 595	104 813	105 888
Customer numbers							
Residential	1 021 412	1 049 749	1 076 880	1 115 666	1 156 343	1 191 645	1 222 988
Business	31 198	30 869	30 876	31 083	31 492	32 110	32 677
Total volume customers	1 052 610	1 080 618	1 107 756	1 146 749	1 187 836	1 223 755	1 255 664
Demand customers	414	423	424	424	424	425	426
New network connections							
New estates and high rise	17 095	21 280	26 954	31 565	33 655	28 495	24 768
Electricity to gas	4988	5215	6273	7220	7022	6807	6575
Total new residential	22 083	26 495	33 227	38 786	40 678	35 302	31 342
Small business	881	975	1075	1175	1251	1335	1410
Demand customers	3	3	3	3	3	3	3
HDD index standard							
HDD index	486	483	480	477	474	471	468
Average residential load per year (GJ)							
Existing customers	22.3	21.1	20.9	20.6	20.4	20.2	20.0
New estates and high rise	20.3	19.7	19.9	20.0	19.8	19.4	19.1
Electricity to gas	15.7	15.2	15.5	15.7	15.7	15.6	15.6
Average	22.3	20.6	20.4	20.1	20.0	19.7	19.4

load all
residential

Maximum
daily
quantity
demand
customers
(MDQ)

MDQ demand customers	334.3	317.5	327.9	330.7	325.0	325.9	326.0
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Amendment 12.1: amend the access arrangement proposal to:

- delete clause 3.6 (including 3.6 H and 3.6 I)
- delete clauses 3.2(b), 3.2(d), 3.2(e) and 3.2(f)
- delete clause 3.4(c)(iii)
- delete clause 3.2(g) and replace it with the following:

Where the Service Provider makes a change to a Reference Tariff at any time in accordance with this section 3 of this Access Arrangement, the Service Provider will publish a revised Reference Tariff Schedule on the Service Provider's website which will take effect from the date specified in that revised Reference Tariff Schedule.

- delete clauses 3.3(d), 3.3(e), 3.3(f), 3.3(g)(ii) and 3.3(i)
- delete clause 3.4(a) and replace it with the following:

The Service Provider will follow the procedures set out below in varying an existing Reference Tariff during the Access Arrangement Period.
- delete clause 1.1 B(d) of schedule 2 – Initial Reference Tariff Schedule
- make all consequential amendments to the access arrangement proposal and access arrangement information to reflect the above.

Amendment 12.2: amend the access arrangement information to:

- delete the following bullet point from section 14.1:

removes perverse incentives at the volume/demand customer threshold by smoothing the pricing transition between these customer segments by introducing a minimum demand bill.
- delete the three paragraphs under the heading titled 'Minimum demand bill' included in section 14.3.4.

Amendment 12.3: amend:

- the access arrangement information (Jemena pricing model) to halve the demand forecasts for demand first response tariff classes that contain more than one customer. The quantities that are removed from the first response are to be allocated to appropriate demand coastal tariff classes
- the access arrangement proposal to reduce the demand first response discount to 25 per cent in clause 1.2 F (d) of schedule 2
- the access arrangement information to reduce the demand first response discount to 25 per cent in section 14.3.4
- the additional revenue recovered by Jemena as a consequence of the amendments in this amendment 12.3, must only be used to reduce tariffs for all coastal demand customers on an equal percentage basis.

Amendment 12.4: amend:

- the access arrangement proposal to remove the premium associated with the legacy services in section 2.4
- the access arrangement information to remove the premium associated with the legacy services in section 13.3.2
- the access arrangement proposal to include a reference tariff for legacy services in Schedule 2 – Initial Reference Schedule

Amendment 12.5: amend the access arrangement proposal to delete the words 'Reference Tariff Policy' in the heading of section 3 and replace them with 'Reference Tariffs and Reference Tariff Variation Mechanism'. Make any and all subsequent amendments necessary to reflect this change.

Amendment 12.6: amend the access arrangement proposal to delete section 1.5 (b) of Schedule 3 and replace it with the following:

If there is any inconsistency between section 3 of the Access Arrangement and the Reference Tariff Schedule, unless otherwise provided, section 3 of the Access Arrangement takes precedence.

Amendment 13.1: amend the access arrangement proposal to:

- delete clause (b) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

The Initial Reference Tariffs are expressed in real 2010/2011 dollars

- delete clause (e) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

In addition to setting out the Initial Tariff Classes and the Initial Reference Tariffs, the Initial Reference Tariff Schedule sets out and explains the tariff components and assignment criteria used in determining the availability of different Reference Tariffs. Prices are expressed in real 2010/11 dollars and are exclusive of GST.

- delete the table in clause 1.2 F (a) of schedule 2 – Initial Reference Tariff Schedule and replace with it the following:

Customer Type	Tariff Class	Unit Rate – dollars per GJ of Chargeable Demand per annum (\$/GJ.CD.pa) Period ending 30 June 2011 Prices are real 2010–2011 GST exclusive dollars				
		First 200 GJ of CD	Next 400 GJ of CD	Next 1000 GJ of CD	Next 2000 GJ of CD	Rest of CD
Demand	DC-1	170.412	110.811	84.565	72.413	64.260
	DC-2	189.309	122.149	92.123	78.082	68.039
	DC-3	256.374	162.388	118.950	98.201	81.452
	DC-4	423.002	262.365	185.600	148.189	114.777
	DC-5	2266.074	1368.208	922.829	701.112	483.392
	DC-6	86.324	60.359	50.929	47.187	47.442
	DC-7	283.206	178.488	129.682	106.251	86.819
	DC-8	584.319	359.156	250.127	196.585	147.041
	DC-9	39.723	32.397	32.290	33.206	38.122
	DC-10	134.705	89.387	70.282	61.701	57.118
	DC-11	1784.139	1079.047	730.056	556.531	387.004
	DC-Country	Demand Capacity Rate for DC-Country is comprised of two components of demand charge; (i) the Capacity Distance Rate; and (ii) the Pressure Reduction Rate. See tables Capacity Distance Rate (cl F(b)), and Pressure Reduction Rate (cl F(c)) below. These charges will be calculated for each Delivery Point and expressed as a single rate \$/GJ.CD.pa for billing purposes.				
<ul style="list-style-type: none"> delete the table in clause 1.2F (b) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following: 						
Customer Type	Tariff Class	Distance Unit Rate – dollars per GJ of Chargeable Demand per annum per km (\$/GJ.CD.pa per km) Period ending 30 June 2011 Prices are real 2010–2011 GST exclusive dollars				
		First 200 GJ of CD	Next 400 GJ of CD	Next 1000 GJ of CD	Next 2000 GJ of CD	Rest of CD
Demand	DC-Country	39.723	23.834	15.889	11.917	7.945

Note: Rates apply per km of the straight line distance from the relevant country receipt point rounded up to the nearest 0.5 km as determined by the Service Provider.

- delete the table in clause 1.2 F (c) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Pressure Reduction Unit Rate – dollars per GJ of Chargeable Demand per annum (\$/(GJ.CD).pa) Period ending 30 June 2011 Prices are real 2010–2011 GST exclusive dollars				
		First 200 GJ of CD	Next 400 GJ of CD	Next 1000 GJ of CD	Next 2000 GJ of CD	Rest of CD
Demand	DC-Country	14.098	8.459	5.639	4.229	2.819

- delete the table in clause 1.2 F (e) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Demand Throughput Rate (\$/GJ) Period ending 30 June 2011 Prices are real 2010–2011 GST exclusive dollars		
		First 1667 GJ per month	Next 2500 GJ per month	Rest
Demand	DT	3.900	3.143	2.635

- delete the tables in clause 1.2 F (f) of schedule 2 – Initial Reference Tariff Schedule and replace them with the following:

Customer Type	Tariff Class		Standing Charge: \$/pa per delivery station Charges based on Delivery Point MHQ Period ending 30 June 2011 Prices are real 2010-2011 GST exclusive dollars				
			MHQ < 10 GJ/hr	MHQ 10 to < 50 GJ/hr	MHQ 50 to <100 GJ/hr	MHQ 100 to < 1000 GJ/hr	MHQ 1000 GJ/hr and greater
Demand	DC-1 to DC-11; DC-Country; DCFR-1 to DCFR-11	Single Run	3,604.522	4,866.883	9,459.925	12,778.160	16,823.523
		Double Run	7,209.044	9,733.765	18,919.851	25,556.320	33,647.046

Customer Type	Tariff Class	Standing Charge: \$/pa per delivery station Charges based on Delivery Point MHQ Period ending 30 June 2011 Prices are real 2010-2011 GST exclusive dollars	
		Charge per Delivery Station Charges based on meter capacity. Period Ending 30 June 2011. Prices are real 2010-2011 GST exclusive dollars	
Volume	V-Coastal & V-Country	For meters with capacity less than or equal to 6m3/hr	Fixed Charge \$29.934 pa
		For meters with a capacity of greater than 6m3/hr	Unit rate \$0.330/GJ, subject to a minimum charge per billing period of: \$XX per monthly billing period, or \$XX per quarter billing period

- delete the table in clause 1.2 F (g) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Volume Throughput Rate (\$/GJ) Period ending 30 June 2011 Price are real 2010-2011 GST exclusive dollars					
	Block size (GJ per month)	First 1.25 GJ	Next 1.5 GJ	Next 5.75 GJ	Next 75 GJ	Next 333.5 GJ	All additional
	Block size (GJ per qtr)	First 3.75 GJ	Next 4.5 GJ	Next 17.25 GJ	Next 225 GJ	Next 1000.5 GJ	
Volume	V-Coastal	10.489	6.036	5.801	5.674	4.935	3.759
	V-Country	10.288	5.835	5.599	5.473	4.734	3.558

- delete the table in clause 1.2 F (h) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Standing Charge – dollars per annum Period ending 30 June 2011 Prices are real 2010-2011 GST exclusive dollars
Volume	V-Coastal & V-Country	51.591

- delete clause 1.2 F (i) of schedule 2 – Initial Reference Tariff Schedule.
- delete the table in clause 1.2 G (a) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Meter Reading Cycle	Meter Reading Charge- \$ per annum per delivery station Prices are real 2010–2011 GST exclusive dollars				
			Period ending 30 June 2011	Period ending 30 June 2012	Period ending 30 June 2013	Period ending 30 June 2014	Period ending 30 June 2015
Volume	All Volume Tariff Classes	Quarterly	4.46	4.46	4.46	4.46	4.46
		Monthly	47.16	47.16	47.16	47.16	47.16
Demand	All Demand Tariff Classes	Daily Meter Reading	828	828	828	828	828

- delete the table in clause 1.2 G (b) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Provision of On Site Data and Communications Equipment - \$ per annum per delivery station				
		Period ending 30 June 2011	Period ending 30 June 2012	Period ending 30 June 2013	Period ending 30 June 2014	Period ending 30 June 2015
Prices are real 2010-2011 GST exclusive dollars						
Demand	All Demand Tariff Classes	1545	1545	1545	1545	1545

- delete clause 1.2 H of schedule 2 – Initial Reference Tariff Schedule and replace it with the following (the figures that appear as XX in the table below have to be updated as a consequence of ancillary services being classified as reference services in amendments 2.1 – 2.4. The ancillary services tariff must be set in accordance with r. 93 and r. 94 of the NGR):

Ancillary Fees

The Ancillary Fees are set out in the table below. Prices are real 2010/2011 dollars and are expressed exclusive of any GST:

Fee Type	Description	Charge
Request for service	For time spent assessing requirements, collating information and responding to a User (or Prospective User) when the User (or Prospective User) requests a new/additional/changed Service, tariff assignment, authorisation of overruns or change in chargeable demand.	XX, plus XX per hour after the first hour
Special meter read	For reads requested by a User rather than ordinary reads (for instance when the meter reader makes a special visit to read a particular meter out of the usual meter reading route or schedule). This service must be scheduled with a minimum 5 day notice period.	\$XX Charge applies per meter read
Temporary disconnection	This charge covers the temporary disconnection of supply to a single Delivery	\$XX Charge applies per meter set

	<p>Point at the request of a User where temporary isolation of supply is required. A request for temporary disconnection is not a request to remove a delivery point from the User's Service Agreement or Legacy Reference Services Agreement. The specific method of isolation will be at the discretion of the Service Provider to ensure the site is able to be left in a safe state. The charge also covers the cost of subsequent reconnection.</p> <p>(This charge is for providing disconnection services in accordance with the Network Code in force at the date of commencement of this Access Arrangement.)</p>	
Permanent disconnection	<p>This charge covers disconnection of supply to a single delivery point at the request of a User and where the User (on behalf of a Customer) also requests that the meter is not to be moved or removed. A request for permanent disconnection is also a request to remove a delivery point from the Users Service Agreement or Legacy Reference Services Agreement. The specific method of disconnection will be at the discretion of the Service Provider to ensure the site is able to be left in a safe state. A request for reconnection must be made as a new connection request.</p> <p>(This charge is for providing disconnection services in accordance with the Network Code in force at the date of commencement of this Access Arrangement).</p>	<p>\$XX</p> <p>Charge applies per meter set</p>
Decommissioning and meter removal	<p>This charge covers permanent decommissioning of a network connection including the removal of the meter. A request to permanently decommission is also a request to remove a delivery point from the Users Service Agreement or Legacy Reference Services Agreement. The specific method of disconnection will be at the</p>	<p>Charges applies per meter</p> <p>(i) meters with a capacity of less than or equal to 6m³/hr: \$XX</p> <p>(ii) meters with a capacity of greater than 6m³/hr: \$XX</p>

	<p>discretion of the Service Provider to ensure the site is able to be left in a safe state.</p> <p>(This charge is for providing disconnection services in accordance with the Network Code in force at the date of commencement of this Access Arrangement).</p>	
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Amendment 13.2:

- amend the access arrangement proposal to delete section 3.5 A and replace it with the following:

The Service Provider will implement its CPI-X price path for the Financial Years commencing on or after 1 July 2011 using the Annual Tariff Variation Mechanism specified as the following formula:

$$(1 + CPI_t)(1 - X_t) \geq \frac{\sum_{x=1}^n \sum_{y=1}^m p_t^{xy} q_{t-2}^{xy}}{\sum_{x=1}^n \sum_{y=1}^m p_{t-1}^{xy} q_{t-2}^{xy}}$$

where:

$$\frac{\sum_{y=1}^m p_t^{xy} * q_{t-2}^{xy}}{\sum_{y=1}^m p_{t-1}^{xy} * q_{t-2}^{xy}} \leq (1 + CPI_t)(1 - X_t) + 0.1$$

For all tariff x where i = 1, ... n

Where the tariff class has up to 'y' components where y = 1, ... m

Note: this side constraint formula applies to CPI changes only (and not cost pass throughs).

Where the Service Provider has n Reference Tariffs, which each have up to m tariff components, and where:

t is the Financial Year for which the tariffs are being set. For example for the 2011–2012 financial year, t = 2012;

p_t^{xy} is the proposed tariff for component y of Reference Tariff x in Financial Year t, i.e. the new tariff to apply in year t;

P_{t-1}^{xy} is the tariff for component y of Reference Tariff x that is being charged at the time the notification is submitted to the AER for assessment. It is the tariff that applies in Financial Year $t-1$, i.e. the tariff that applies before the new tariffs come into effect;

Q_{t-2}^{xy} is the quantity of component y of Reference Tariff x that was sold in Financial Year $t-2$;

CPI_t is defined in Section B;

X_t is defined by the alignment of the Service Provider's building block revenue requirement with the NPV of its forecast revenues and is determined to be:

–1.96% in 2011/12;

–1.96% in 2012/13;

–1.96% in 2013/14; and

–1.96% in 2014/15.

- amend section 15.4.1 of the access arrangement information to:
 - delete V_t from the second formula
 - delete the last two paragraphs
 - delete the annual tariff variation events from Table 16–1 in the access arrangement information and update the list of pass through events in the table to take into account the AER's draft decision on cost pass throughs set out in this chapter 13.
- amend section 16.1 of the access arrangement information to delete the last paragraph
- amend the access arrangement information to delete section 16.4 and replace it with the following:

JGN has considered the following criteria and information in order to determine which costs and events to propose as pass throughs and which are best included in JGN's proposed opex forecasts:

Can the event be reasonably foreseen?

Are the details of the event firmly defined to enable JGN to establish confidently a cost forecast?

Does a pass through already apply consistent with rule 97(3)(c) of the NGR?

- delete section 16.5 of the access arrangement information

Amendment 13.3: amend the access arrangement proposal to:

- delete section 3.5 C and replace it with the following:

(a) The Annual Tariff Variation Mechanism provides for annual adjustment in accordance with the approved price path (X factor) and for the variation of Reference Tariffs where there is an impact on the cost of providing Reference Services as a result of a cost pass-through event, the cost of which was not included in the amount of the Initial Reference Tariffs and price path.

(b) Cost pass-through events are:

a Licence Fee Event;

a Change in Tax Event;

a Business Continuity Event;

a Market Costs Event;

a Declared Retailer of Last Resort (ROLR) Event;

an Unaccounted for Gas (UAG) Adjustment Event;

a General Pass Through Event,

(any of which is a **Cost Pass-Through Event**)

where:

“Licence Fee Event” means the annual cost incurred by the Service Provider as a result of any decision by the AER, IPART, AEMO, the Gas Market Company or any other relevant regulator, authority or State or Commonwealth Government which has the effect of changing or introducing any authorisation fee, licence fee or statutory charge imposed on the Service Provider which is related to the operation of the network.

“Change in Tax Event” means:

- (i) a change in the way, or rate at which, a Relevant Tax is calculated including a change in the application or official interpretation of Relevant Tax); or
- (ii) the removal of a Relevant Tax or imposition of a new Relevant Tax.

“Business Continuity Event” means any occurrence that may create, or may lead to, an interruption, disruption, loss and/or crisis in the Service Provider’s business for which the Service Provider does not have full insurance coverage as identified in the Service Provider’s Access Arrangement Information, including but not limited to, gas supply shortfall, tsunami, cyclone, pandemic illness and earthquake.

“Market Costs Event” means any

- (i) decision made by the AER, or any other authority;

- (ii) coming into force of any new statute, regulation, order, rule, subordinate legislation or other source of legal obligation on the Service Provider;
- (iii) change in any existing statute, regulation, order, rule, subordinate legislation or other source of legal obligation on the Service Provider; or
- (iv) change in any other document enforceable under any statute, regulation, rule or subordinate legislation;

which occurs on or after 1 July 2010, which has the effect of:

- (v) imposing minimum standards (including network design, operational or safety standards) on the Service Provider that are new or different from those applying immediately before 1 July 2010; or
- (vi) substantially altering the manner in which the Service Provider is required to undertake any activity forming part of, or ancillary to, its Reference Services (including, but not limited to, rules governing the operation of competitive gas markets or a requirement that a party other than, or in addition to, the Service Provider be required to comply with the obligation of a Service Provider for the Network under the National Gas Law and National Gas Rules);

such that the Service Provider incurs greater or lesser costs in providing the Reference Service than it did before the event occurred.

“Declared Retailer of Last Resort (ROLR) Event” means the occurrence of an event whereby the Service Provider incurs materially higher or lower administrative costs as a result of an existing retailer for Customers being unable to continue to supply gas and those Customers being transferred to the declared retailer of last resort.

“UAG Adjustment Event” occurs when annual forecast UAG costs are different to the actual UAG costs incurred for that year.

“General Pass Through Event” means any other pass through event which occurs in the following circumstance:

1. An uncontrollable or unforeseeable event occurs during the access arrangement period, the effect of which could not have been prevented or mitigated by prudent operation risk management.
2. The costs of the event are not already included in building block revenue or reimbursed by a third party.

These events will be assessed at the time of application for consistency with the relevant National Gas Rules criteria. For the purpose of this definition, an event will be considered unforeseeable if, at the time the Service Provider lodged its access arrangement revision proposal, despite the occurrence of the event being a possibility there was no reason to consider that

the event was more likely to occur than not to occur during the access arrangement period.

- (c) Subject to the AER's approval, Haulage Reference Tariffs will be adjusted to pass through the costs of one or more of the Cost Pass-Through Events, subject to each individual pass through event meeting the materiality threshold. The materiality threshold is defined:
- (i) for all Cost Pass-Through Events except Change in Tax Event and UAG Adjustment Event – at least 1 per cent of total revenue approved in the relevant year that a cost pass through cost is incurred;
 - (ii) for Change in Tax event and UAG Adjustment Event – where the change in cost incurred is greater than the administrative costs of the Service Provider, users and the AER in making and reviewing the Variation Notice. The incurred cost of these events must be readily verified by documentation such as invoices or independently audited information. A Change in Tax Event or a UAG Adjustment Event which cannot be independently documented will be subject to the materiality threshold in paragraph (i).

- delete section 3.5 D and replace it with:

Calculation of the UAG Adjustment

Reference Tariffs will be adjusted each year to account for the variation between the allowance for UAG included in the cost of service for the previous Financial Year in the Access Arrangement and the multiple of:

- (i) the latest forecast of gas receipts for the previous Financial Year;
- (ii) the forecast UAG level (2.34 per cent); and
- (iii) the actual average price per gigajoule paid for gas pursuant to the gas being purchased by the cheapest means (for example via an open tender, Short term trading market (STTM) or any other cheaper alternative).

Reference Tariffs will be adjusted in the event that UAG is removed as a Network cost during the Access Arrangement Period.

- delete section 3.5 E
- delete section 3.5 F
- delete section 3.5 G

Amendment 13.4: amend section 3.4(b) in the access arrangement proposal to include a rounding convention.

Amendment 13.5: amend section 3.4(d) in the access arrangement proposal to include a new paragraph (vi) stating:

If it appears that any past tariff variation contains a material error or deficiency because of a clerical mistake, accidental slip or omission,

miscalculation or misdescription, the AER may change subsequent tariffs to account for these past issues.

Amendment 13.6: amend:

- the access arrangement proposal to delete section 3.4 (b)(i) and replace it with the following:

Annual Variation of Reference Tariffs: Where the Service Provider proposes to vary the Haulage Reference Tariffs to apply from the start of the next Financial Year, it will submit a Variation Notice to the AER on the 15th of April or the next closest business day prior to the commencement of the next Financial Year.

- the access arrangement proposal to delete section 3.4 (b)(ii) and replace it with the following:

Variation of a Reference Tariff within a Financial Year: Where the Service Provider proposes to vary one or more Haulage Reference Tariffs within a Financial Year it will submit a variation notice to the AER at least on the 15th of April or the next closest business day, prior to the date upon which it intends to vary the amount of the Haulage Reference Tariff.

- the access arrangement proposal to delete section 3.4(b)(iii)
- the access arrangement proposal to delete section 3.4(b)(iv) and replace it with the following:

Any proposed changes to Haulage Reference Tariffs submitted by the Service Provider under this Access Arrangement must comply with the Annual Tariff Variation Mechanism.

- the access arrangement proposal to delete sections 3.4 (d)(i) and 3.4(d)(ii) and replace them with the following:

- (i) Within 30 Business Days of receiving the Service Provider's Variation Notice, the AER will inform the Service Provider in writing of whether or not it has verified the proposed Haulage Reference Tariff and/or Haulage Reference Tariff Components in the Service Provider's Variation Notice as compliant with the Annual Tariff Variation Mechanism.

The 30 Business Day period may be extended for the time taken by the AER to obtain information from the Service Provider, obtain expert advice or consult about the notification. However, the AER must assess a cost pass through application within 90 Business Days, including any extension of the decision making time.

- (ii) If the AER fails to provide the Service Provider with written notification of its decision within 30 Business Days (excluding any extension of time outlined in paragraph (i)) of receiving the Service Provider's Variation Notice, the AER will be deemed to have approved the variation proposed in the Variation Notice.

- the access arrangement proposal to delete section 3.4 (d)(v) and replace it with the following:

In relation to a Variation Notice relating to Haulage Reference Tariffs, in the event that the AER decides that any part of the proposal in the Variation Notice is not compliant for a new Financial Year t, then the AER may specify a variation that is consistent with the Annual Tariff Variation Mechanism.

- the access arrangement proposal to delete section 3.4 (e)
- the access arrangement information to delete the first sentence of section 15.4.2 and replace it with the following:

JGN will submit its annual reference tariff proposal to the AER for approval on the 15th of April or the next closest business day prior to the relevant financial year in which the proposed tariffs are to apply.

Amendment 13.7: amend the access arrangement proposal to delete section 3.5 B and replace it with the following:

Calculation of CPI adjustment

For the purpose of the Annual Tariff Variation Mechanism, CPI for a particular Financial Year means:

- (a) for a Financial Year beginning after 1 July 2010:
 - (i) the Consumer Price Index: All Group Index for the Eight State Capitals as published by the Australian Bureau of Statistics for the December Quarter immediately preceding the start of the relevant Financial Year; divided by
 - (ii) the Consumer Price Index : All Group Index for the Eight State Capitals as published by the Australian Bureau of Statistics for the December Quarter immediately preceding the December Quarter referred to in paragraph (i),
 - (iii) minus one.
- (b) If the Australian Bureau of Statistics does not, or ceases to calculate and publish the CPI, then CPI will mean an inflation index or measure agreed between the AER and the Service Provider.

Amendment 13.8: amend the access arrangement proposal to include a new paragraph (iv) in section 3.4(c):

a statement to support the Gas Quantity inputs in the tariff variation formula. The statement must be independently audited or verified and the Quantity input must reflect the most recent actual annual quantities available at the time of tariff variation assessment. The actual Quantity should be provided as four quarters of Gas Quantity data reconciling to an annual total Quantity of Gas.

Amendment 13.9: amend the access arrangement proposal to delete section 3.4 (c)(ii) and replace it with the following:

an explanation as to how the proposal complies with the Annual Tariff Variation Mechanism supported by workings demonstrating how the proposed tariffs have been estimated using the existing tariffs as a reference.

Amendment 13.10: amend the access arrangement information so the cost pass through events described in section 16.6 are described and named according to the cost pass through categories set out in section 3.5 C (c) of the access arrangement proposal.

Amendment 13.11: amend the access arrangement proposal to include a new paragraph (vii) in section 3.4(d):

In making a decision whether or not to approve a Cost Pass-Through Event, the AER must take into account the following:

- A The costs to be passed through are for the delivery of pipeline services
- B The total costs to be passed through are building block components of total revenue
- C The costs to be passed through meet the relevant National Gas Rules criteria for determining the building block for total revenue in determining reference services
- D Any other factors the AER considers are relevant and consistent with the National Gas Law and National Gas Rules.

Amendment 13.12: amend the access arrangement proposal to include a new paragraph (viii) in section 3.4(d):

The Service Provider must provide to the AER a verification statement signed by an officer of the Service Provider stating that the financial impact of the Cost Pass-Through Event in a Variation Notice is net of any third party payments including insurer payments or reimbursements in connection with the event (including self insurance). The verification statement will also provide information about the financial impact of the event and any reimbursements or payments made by a third party in connection with the event.

An application for a Change in Tax Event must be supported by information about the financial impact of the taxation change event from the relevant taxation or regulatory authority. An application for a UAG Adjustment Event must be supported by a statement verified by an independent auditor which sets out the actual gas throughput, the UAG charged to users and confirmation that the UAG was purchased at lowest cost of gas available at the time (for example, by an open competitive tender or in the STTM).

Amendment 13.13: amend the access arrangement proposal to include a new paragraph (ix) in section 3.4(d):

Tariffs will only change once a year on 1 July as a result of Change in Tax events and UAG Adjustment Events.

Amendment 13.14: amend the access arrangement proposal to include a new paragraph (x) in section 3.4(d):

Regardless of whether a Cost Pass-Through Event leads to tariffs increasing or decreasing, the Service Provider must notify the AER that a Cost Pass-Through Event other than Change in Tax Event and UAG Adjustment Event has occurred no later than 90 Business Days after the costs of a Cost Pass-Through Event have been incurred.

Amendment 14.1: amend the access arrangement proposal and access arrangement information to state the terms and conditions on which the ancillary services reference service will be provided.

Amendment 14.2: amend the access arrangement proposal and access arrangement information to state the terms and conditions on which the legacy services reference service will be provided.

Amendment 14.3: amend the access arrangement proposal to include the following new clause 17.7 in Schedule 3:

In the event that the User reasonably forms the view that meter data information or a meter reading is incorrect, it shall notify the Service Provider of this in writing as soon as reasonably practicable stating the reason for their belief. The Service Provider undertakes to investigate the matter and advise the User of its findings without delay.

Amendment 14.4: amend the access arrangement proposal to delete clause 2.2, section C(b) and replace it with the following:

The Service Provider may seek the AER's approval to amend the terms of the Reference Services Agreement during the Access Arrangement Period in accordance with Division 10 of Part 8 of the NGR.

Amendment 14.5: amend the access arrangement proposal to delete clauses 2.2, section C(c) – 2.2, section C(f).

Amendment 14.6: amend the access arrangement proposal to delete clause 1.4(b) of Schedule 3 and replace it with the following:

the User agrees that such amendments will vary the terms of this Agreement effective 10 Business Days from the date of the written notice unless the User can demonstrate to the Service Providers' reasonable satisfaction that it is not able to comply with this timeframe in which case the Service Provider will grant a reasonable extension.

Amendment 14.7: amend the access arrangement proposal to delete in clause 1.4 of Schedule 3 the following:

- 'or is deemed to have approved'
- '(or a replacement of the Reference Services Agreement)'.

Amendment 14.8: amend the access arrangement proposal to delete the words 'by the Service Provider' in clauses 10.1(a)(ii), 14.9(a) and 24.2(a)(ii)(B) of Schedule 3 and replace them with the words 'in accordance with the Variation Process outlined in Division 10 of Part 8 of the NGR.'

Amendment 14.9: amend the access arrangement proposal to delete the words 'by the Service Provider to the extent necessary to take account of the changed circumstances' in clauses 1(c) of annexure 3 and 1(c) of annexure 4 of Schedule 3 and replace them with the words 'in accordance with the Variation Process outlined in Division 10 of Part 8 of the NGR'.

Amendment 14.10: amend the access arrangement proposal to delete the last sentence of annexure 6 of Schedule 3 and replace it with the following:

The Service Provider may amend this Annexure at any time in accordance with the Variation Process outlined in Division 10 of Part 8 of the NGR and will notify Users of any such amendments and publish the updated Annexure on its website.

Amendment 14.11: amend the access arrangement proposal to delete the words ‘by the Service Provider’ in the definition of ‘Reference Tariff Schedule’ in clause 1.1 of Schedule 3.

Amendment 14.12: amend the access arrangement proposal to include the following in clause 1.1 of Schedule 3:

Variation Process means the mechanisms and timelines provided for or referred to in Part 8 of Division 10 of the NGR;

Amendment 14.13: amend the access arrangement proposal to:

- include in clause 4.7(b)(iv) of Schedule 3 the words ‘for the relevant Delivery Point’ after the words ‘Chargeable Demand’
- include in clause 4.7(c) of Schedule 3 the words ‘provide their reasons in writing and’ after the words ‘The Service Provider will’
- delete the word ‘following’ in clause 4.7(e)(ii) of Schedule 3 and replace it with the word ‘preceding’
- delete clause 4.7(e)(iii) of Schedule 3
- delete clause 4.7(f) of Schedule 3 and replace it with the following:

A reduction in Chargeable Demand pursuant to clause 4.7(e) will take effect from the first day of the calendar month immediately following the date of receipt of the complete Reduction Request.

- delete the words 'either' and 'or 4.7(e)(iii)' from clause 4.7(g)(i) of Schedule 3.

Amendment 14.14: amend the access arrangement proposal to delete clause 7.4 of Schedule 3 reads as follows and replace it with the following:

- (a) The AEMO, or a relevant industry scheme, may provide a mechanism for the Gas Balancing of Network Sections. The Service Provider must implement any and all mechanisms as required by law.
- (b) The Service Provider may implement a mechanism other than that referred to in clause 7.4(a) if it reasonably considers that the mechanism:
 - (i) meets the operational requirements of the Network Section; and

- (ii) is not contrary to a provision of this Access Arrangement.
- (c) The Service Provider must notify all Network Users:
 - (i) if the Service Provider intends to implement a mechanism under clauses 7.4(a) or 7.4(b), in which case the notice will include:
 - (A) the date on which the mechanism referred to in clause 7.4(a) or 7.4(b) takes effect for the purpose of this agreement; and
 - (B) any technical conditions or arrangements reasonably required by the Service Provider to facilitate transition to a mechanism.
 - (ii) if the Service Provider does not intend to implement a mechanism other than that referred to in clause 7.4(a).
- (d) Where a mechanism is implemented by the Service Provider and notified to the Network User in accordance with clauses 7.4(a) and 7.4(c) and the mechanism is subsequently withdrawn, the Service Provider will notify all Network Users that it has withdrawn the mechanism.
- (e) If the Service Provider implements a mechanism under clause 7.4(a):
 - (i) the mechanism under clause 7.4(a) will operate to govern the Gas Balancing of Network Sections;
 - (ii) neither Gas Balancing Annexure will apply;
 - (iii) the User must comply with the requirements of the mechanism referred to in clause 7.4(a);
 - (iv) the User and the Service Provider must comply with clauses 7.5, 7.6 and 7.7 below.

Amendment 14.15: amend the access arrangement proposal and the access arrangement information to reflect amendment 14.14.

Amendment 14.16: amend the access arrangement proposal to include in clause 7.5(a) of Schedule 3 the following words after ‘clause 7.4(a)’:

And clauses 7.5(c)–(f) only apply insofar as the AEMO or a relevant industry scheme does not set out a timetable.

Amendment 14.17: amend the access arrangement proposal to delete the reference to ‘clause 7.5(a)’ in clause 7.5(c) of Schedule 3 and replace it with ‘clause 7.5(b)’.

Amendment 14.18: amend the access arrangement proposal to delete the words ‘and Indemnity’ from the heading of clause 9.1 of Schedule 3.

Amendment 14.19: amend the access arrangement proposal to delete the words ‘1 July 2009’ in clause 11.4(c)(v) of Schedule 3 and replace them with the words ‘1 July 2010’.

Amendment 14.20: amend the access arrangement proposal to include after the words ‘at its own discretion’ in clause 15.6(a) of Schedule 3 the following:

subject to the requirement that it must consult with the User to determine whether the User’s customer intends to increase load and/or change their pattern of usage such that a downgrade is no longer required.

Amendment 14.21: amend the access arrangement proposal to:

- include the following words after ‘Network at the User’s cost.’ in clause 16.1(c) of Schedule 3:

An area will be considered unsuitable if it cannot be accessed without risk of personal injury or is of a type where it is reasonably foreseeable that measuring equipment will sustain damage.

- include a new clause 16.1(d) in Schedule 3 to state:

Where the Service Provider considers that clauses 16.1(b) or 16.1(c) may apply, it will provide the User with written notice stating the reasons why it considers clauses 16.1(b) or 16.1(c) apply and provide the User with a reasonable period of time within which to remedy the matter before taking action under clauses 16.1(b) or 16.1(c).

Amendment 14.22: amend the access arrangement proposal to delete clause 16.3(a) of Schedule 3 and replace it with the following:

estimate the Quantity of Gas delivered to that Delivery Point, by having regard to Gas consumption patterns for that Delivery Point, and render an invoice based on such an estimate; and/or

Amendment 14.23: amend the access arrangement proposal to delete clause 16.3(c) of Schedule 3 and replace it with the following:

after giving the User 1 Business Day’s written notice for safety issues, and 5 Business Day’s notice for all other issues, replicate at a location accessible to the Service Provider, and at the User’s reasonable cost, the Measuring Equipment at the Delivery Point.

Amendment 14.24: amend the access arrangement proposal to include at the end of clause 16.8 of Schedule 3 the following:

Where the safe and reliable operation or the protection of the Network does not necessitate immediate action, the Service Provider will notify the User of any issue coming within the scope of clause 16.8 and outline its concern and state a reasonable period of time within which the User may rectify the issue before the Service Provider will take action at the User’s cost.

Amendment 14.25: amend the access arrangement proposal to include a new clause 22.8(aa) of Schedule 3 that states:

Where the Service Provider has undercharged or not charged a User, the User is not obliged to pay any additional charges to the extent that the User is precluded by law from recovering those charges from its customers. Where the Service Provider has overcharged a User, the User may seek to recover additional charges to the extent permitted by law and pass those charges through to its customers.

Amendment 14.26: amend the access arrangement proposal to delete the word ‘or’ where it first appears in clause 25.2(c)(i) of Schedule 3 and replace it with the word ‘and’.

Amendment 14.27: amend the access arrangement proposal to delete clause 27.3 of Schedule 3 and replace it with the following:

If the User defaults in payment of any moneys payable under this Agreement, excluding payments disputed under clause 26.2, for a period of 7 Days after notification of the default then the Service Provider may, at the Service Provider’s sole discretion, either terminate this Agreement or cease to provide Service to any one or more Delivery Points by notice in writing, such termination or cessation to take effect 48 Hours after delivery of the notice and/or may call on the Security.

Amendment 14.28: amend the access arrangement proposal to delete clauses 15.12(b) and 24.3(b) of Schedule 3.

Amendment 14.29: amend the access arrangement proposal to delete clauses 17.5 and 17.6 of Schedule 3.

Amendment 14.30: amend the access arrangement proposal to delete the following words from the definition of ‘Demand Customer List’ in clause 1.1 of Schedule 3:

(or such other form determined by the Service Provider)

Amendment 14.31: amend the access arrangement proposal to:

- include the words ‘as outlined in rule 105(3) of the NGR’ before the full stop of the first sentence in clause 29.4(b) of Schedule 3
- include the words 'An example might be, if the Service Provider would not receive at least the same amount of revenue it would have received before the change' as a third sentence in clause 29.4(b) of Schedule 3.

Amendment 14.32: amend the access arrangement proposal to delete clauses 7(a)(i)–(iv) and replace them with the following:

- (i) If Jemena proposes a high pressure pipeline extension of the covered pipeline it must apply to the AER in writing to decide whether the proposed extension will be taken to form part of the covered pipeline and will be covered by this access arrangement. The application must be made in accordance with clause 7(a)(ii).

For the purposes of this section 7, a high pressure pipeline extension means a pipeline that exceeds one kilometre in length and is proposed to be built to a postcode area previously not serviced by reticulated gas.

- (ii) Jemena must apply to the AER under clause 7(a)(i) before the proposed high pressure pipeline extension comes into service:

in writing;

stating whether Jemena intends for the proposed extension to be covered by the Access Arrangement; and

describing the high pressure pipeline extension and setting out why the extension is being undertaken.

- (iii) Jemena is not required to advise the AER under clause 7(a)(i) to the extent that the cost of the high pressure pipeline extension has already been included in the calculation of Reference Tariffs.
- (iv) After considering the Service Provider's application, and undertaking such consultation as the AER considers appropriate, the AER will inform the Service Provider of its decision on the Service Providers' proposed coverage approach for the high pressure pipeline extension.
- (v) The AER's decision referred to in 7(a)(iv) above, may be made on such reasonable conditions as determined by the AER and will have the effect stated in the decision.

Amendment 14.33: amend the access arrangement proposal to delete clause 7(b) and replace it with the following:

Any extensions to and expansions of the capacity of the Network which are not high pressure pipeline extensions within the meaning of clause 7(a)(i) will be treated as part of the Network and covered by this Access Arrangement.

Amendment 14.34: amend the access arrangement proposal to include the following new clause 7(bb):

All extensions of low or medium pipelines and expansions of the capacity of the Network carried out by the Service Provider will be treated as covered under this Access Arrangement. No later than 20 Business Days following the expiration of its financial year, the Service Provider must notify the AER of all extensions of low or medium pipelines and expansions of the capacity of the Network during that financial year, including all expansions commenced, in progress and completed. The notice must describe each extension and expansion and set out why this was necessary.

Amendment 14.35: amend the access arrangement proposal to include at the end of clause 7(c) the following:

The Service Provider will notify the AER of any proposed surcharge to be levied on users of incremental services and designed to recover non-conforming capital expenditure or a specified portion of non-confirming capital expenditure (non-conforming capital expenditure which is recovered by means of a surcharge will not be rolled into the capital base).

Amendment 14.36: amend the access arrangement information to reflect amendments 14.32–14.35.

Amendment 14.37: amend the access arrangement proposal to delete clause 13(b) of the Schedule 3 and replace it with the following:

The User may not change a Receipt Point or a Delivery Point without the Service Provider's prior written consent, which shall only be withheld on

reasonable commercial or technical grounds, and which may be given subject to reasonable commercial and technical conditions. An example might be, if Jemena would not receive at least the same amount of revenue it would have received before the change.

Amendment 14.38: amend the access arrangement proposal to include the following new clause 1.8:

The AER may require Jemena to revise its access arrangement for inconsistencies with changes to the terms and conditions of access between the approved access arrangement and the NGL or NGR.

The revisions submission date stated in clause 1.6 of the access arrangement proposal will advance on the occurrence of a *trigger event* described below.

For the purposes of this clause, a 'trigger event' occurs if:

- (a) there is an amendment to the National Gas Law or the National Gas Rules, or the National Energy Retail Law or National Energy Retail Rules commence operation in NSW; or
- (b) the STTM does not operate as anticipated and the Access Arrangement does not effectively accommodate the STTM; and
- (c) the AER provides Jemena with a notice stating that the circumstances described in (a) or (b) are significant. An amendment or the commencement in NSW of the National Energy Retail Law or National Energy Retail Rules is significant if it affects or impacts upon reference tariffs.

The new review submission date will be the date 6 months from the date of the notice provided by the AER under this clause.

Shortened forms

Shortened form	Extended form
access arrangement information	Jemena Gas Networks (NSW) Ltd, <i>Access arrangement information</i> , 25 August 2009
access arrangement period	1 July 2010 to 30 June 2015
access arrangement proposal	Jemena Gas Networks (NSW) Ltd, <i>Access arrangement</i> , 25 August 2009
AER	Australian Energy Regulator
CPI	consumer price index
Code	National Third Party Access Code for Natural Gas Pipeline Systems
earlier access arrangement	Access arrangement for 1 July 2005 to 30 June 2010 inclusive
earlier access arrangement period	1 July 2005 to 30 June 2010 inclusive
IPART	The Independent Pricing and Regulatory Tribunal
Jemena	Jemena Gas Networks (NSW) Ltd
NGL	National Gas Law
NGR	National Gas Rules

Introduction

Jemena network

The Jemena Gas Networks (NSW) Ltd's (Jemena) gas network provides gas to more than 1 050 000 of its users' customers across Sydney, Newcastle, the Central Coast, Wollongong, and over 20 country centres including those within the Central Tablelands, Central West, Southern Tablelands and Riverina districts.⁸

The Jemena gas network transports 66 petajoules (PJ) of gas per year to 414 large customers who each consume more than 10 terajoules (TJ) per year and who account for 12 per cent of JGN's revenue. Jemena transports 35 PJ of gas per year for users to supply the remaining 1 050 000 customers who provide 88 per cent of Jemena's revenue.⁹

Residential gas usage is mainly for home heating, water heating and cooking. Commercial premises use natural gas mainly for water heating, cooking and other commercial appliances. Industrial customers use gas as a source of energy for production processes and in some cases as feedstock for fertiliser or petrochemical products.

The section of the network that services Sydney, Newcastle and Wollongong has four receipt points where Jemena accepts gas from:

- the Moomba to Sydney Pipeline (MSP), owned by the Australian Pipeline Trust and APT Investment Trust (APA Group), which principally transports gas from Moomba in South Australia to Jemena's Wilton receipt point
- the Jemena owned Eastern Gas Pipeline (EGP) pipeline which transports gas produced in Bass Strait from the Longford plant in Victoria to:
 - Jemena's Horsley Park receipt point
 - Jemena's Port Kembla receipt point
- the Sydney Gas Company (SGC) which injects coal seam methane at the Rosalind Park receipt point near Campbelltown.
- There are 32 separate country receipt points for each of the country centres served by the Jemena gas network. All of the country receipt points are connected to the MSP or the Central West Pipeline.¹⁰

The gas network consists of approximately 267 km of trunk mains, 143 km of primary mains, 1428 km of secondary mains and 22 596 of medium and low pressure pipelines.

8 Jemena, *Access arrangement information*, August 2009, p. 9.

9 Jemena, *Access arrangement information*, August 2009, p. 13.

10 Jemena, *Access arrangement information*, August 2009, p. 10.

Regulatory process: background

The Jemena Gas Networks (NSW) Ltd access arrangement proposal, 25 August 2009 (access arrangement proposal) submitted by Jemena¹¹ in August 2009 is a revision to the access arrangement approved by the Independent Pricing and Regulatory Tribunal (IPART) in 2005.¹²

The access arrangement proposal is the first to be assessed by the Australian Energy Regulator (AER) under the National Gas Law (NGL) and National Gas Rules (NGR). The access arrangement proposal is being considered under transitional provisions.

Developments since commencement of earlier access arrangement

The NSW gas network is owned by Jemena, formerly named AGL Gas Networks Limited, and Alinta AGN Ltd. In recent years, there have been a series of ownership changes of the Jemena gas network. Ownership of the Jemena gas network changed in October 2006 when Alinta Limited acquired the Australian Gas Light Company (AGL), including AGL Gas Networks Limited (AGLGN). The company was then renamed Alinta AGN Ltd. Ownership changed again on 31 August 2007 when Singapore Power International acquired a portion of Alinta's assets including all shares in Alinta AGN Ltd. The company was subsequently renamed Jemena Gas Networks (NSW) Ltd.¹³

Prior to the introduction of the NGL, gas distribution networks were regulated by states and territories and gas transmission pipelines were regulated by the Australian Competition and Consumer Commission (ACCC) under the National Third Party Access Code for Natural Gas Pipeline Systems (Code). The Code classified specific pipelines as either transmission or distribution pipelines. Jemena's gas network was mainly classified as distribution pipelines, however, the Wilton to Newcastle (Northern trunk) and the Wilton to Wollongong (Southern trunk) were licensed as transmission pipelines under the Code. However, under a NSW Regulation the trunk pipelines¹⁴ were treated as distribution pipelines for the purposes of the Code until the commencement of the NGL.

In April 2009 Jemena applied to the National Competition Council (NCC) to reclassify its two transmission trunk pipelines i.e. the Northern trunk and the Southern trunk as distribution pipelines under the NGL. The NCC approved Jemena's application in June 2009¹⁵, and going forward the trunk pipelines are classified as distribution pipelines.

Preparations are underway for the introduction of the Short Term Trading Market (STTM). This will facilitate the settlement of wholesale gas sales to Jemena's distribution network, servicing Sydney, Wollongong, Newcastle and the Central Coast

11 Jemena, *Access arrangement proposal*, August 2009.

12 IPART, *Revised access arrangement for AGL Gas Networks*, April 2005.

13 Jemena, *Access arrangement proposal*, August 2009, p. 15.

14 Jemena, *Access arrangement information*, August 2009, p. 16.

15 National Competition Council, *Jemena pipeline reclassification*, 29 June 2009.

by treating them as a single market hub. The implementation of the STTM will result in users being indifferent to where gas is sourced. The STTM is intended to promote competition between gas sources and transporters of gas on transmission pipelines. As a consequence, Jemena proposes a hub pricing structure for the trunk pipelines based on block pricing for the use of gas.

Pre-consultation process

Prior to the receipt of Jemena's access arrangement proposal in August 2009, the AER engaged in several meetings with Jemena in late 2008 and early 2009. These meetings mainly centred on the information required to support Jemena's access arrangement proposal and agreement about various administrative processes during the review. The culmination of these meetings was the development of a regulatory information notice served on Jemena by the AER on 12 May 2009. In addition, Jemena and the AER discussed other administrative matters relevant to the review, including Jemena's application to consolidate the four access arrangements into a single access arrangement to cover all of the covered pipelines of the Jemena gas network.

On 25 August 2009, Jemena submitted its access arrangement proposal to the AER. The AER published Jemena's access arrangement proposal on 15 September 2009 and held a public forum on the proposal in Sydney on 23 September 2009.

On 27 November 2009 the AER held a round table discussion concerning certain specific terms and conditions proposed in Jemena's access arrangement proposal.¹⁶ This was followed up by a round table discussion on 11 December 2009 about Jemena's proposed tariffs and tariff structure.¹⁷

The AER engaged the following consultants to assist in its consideration of the access arrangement proposal:

- Wilson Cook to review the proposed capital and operating expenditure
- ACIL Tasman (ACIL) to review the proposed demand forecasts
- Access Economics to advise on the proposed labour cost escalators.

Key considerations

Substantive changes in Jemena's access arrangement proposal include:

- the structure of its reference tariff for demand customers, which has resulted in a change in the number and nature of tariffs and tariff classes

16 AER, *Roundtable discussion of Jemena's access arrangement proposal (2010–2015): terms and conditions*, 27 November 2009, viewed 15 January 2010, <<http://intranet.acc.gov.au/content/index.phtml/itemId/1116957>>.

17 AER, *Roundtable discussion of Jemena's access arrangement proposal (2010–2015): proposed tariffs and tariff structure*, 11 December 2009, viewed 15 January 2010, <<http://intranet.acc.gov.au/content/index.phtml/itemId/1121814>>.

- the level of its network charges reflecting a higher cost of capital and increased capital expenditure and operating expenditure
 - the higher cost of capital of 11.21 per cent because of the use of the Fama–French three-factor model (FFM) from a range of 8.14–9.03 per cent applying a Sharpe–Lintner capital asset pricing model (CAPM) approved by the IPART in the period 1 July 2005 to 30 June 2010 inclusive (earlier access arrangement period)
 - the higher projected capital expenditure increasing from \$556.6 million in the earlier access arrangement period (\$2009–10) to \$885 million (\$2009–10) in the period 1 July 2010 to 30 June 2015 inclusive (access arrangement period)
 - the higher operating expenditure increasing from \$634 million (\$2009–10) in the earlier access arrangement period to \$735 million (\$2009–10) in the access arrangement period.

These issues are considered in detail in the draft decision.

Outcome of AER’s review

The AER does not approve Jemena’s access arrangement proposal as it is not satisfied that it meets the requirements specified in the NGR.¹⁸ The draft decision sets out the detailed reasons¹⁹ and the amendments (or the nature of the amendments)²⁰ required to be made to the access arrangement proposal or Jemena Gas Networks (NSW) Ltd, Access arrangement information, 25 August 2009 (access arrangement information).

Jemena proposed an average tariff increase for reference haulage services in the order of 34 per cent in 2010–11 to recover its proposed revenues of \$466.8 million (\$2009–10). Following consideration of Jemena’s proposal, the AER has reduced the proposed revenue requirement to \$390 million (\$2009–10) resulting from reductions to Jemena’s proposed capital and operating expenditure and its proposed cost of capital.

The total revenue established in the draft decision mean that volume haulage reference tariffs—the tariffs applying to the majority of customers—are proposed to increase by 1.23 per cent in real terms in 2010–11. The tariff changes for large demand customers will vary according to location within the network and may increase some locations. In the remaining years of the access arrangement period, haulage tariffs will increase annually on average by 1.96 per cent in real terms. These increases do not include the effects of cost pass throughs over the access arrangement period.

18 NGR, r. 41 and r. 100.

19 NGR, r. 59(4).

20 NGR, r. 43(3) and r. 59(2).

Next steps

The AER has scheduled a forum on the draft decision for 24 February 2010 in Sydney. The AER will use this forum to explain the draft decision to interested parties and to obtain and consider comments from interested parties.

Jemena may submit a revised access arrangement proposal and updated access arrangement information to the AER by 19 March 2010.

Submissions on the AER's draft decision and Jemena's revised access arrangement proposal from interested parties are due by 28 April 2009.

The AER expects to make a final decision by the end of May 2010.

Structure of draft decision

The AER's consideration of Jemena's access arrangement proposal and accompanying access arrangement information are set out as follows:

- Introductory chapters outline the regulatory overview and pipeline services.
- Part A outlines the key components of the total revenue building blocks including the capital base, depreciation, the rate of return, taxation, the incentive mechanism, fixed principles, operating expenditure and provides a summary of total revenue.
- Part B outlines the demand forecasts, reference tariffs and tariff variation mechanisms.
- Part C outlines the non-tariff components of the access arrangement proposal.

Chapter summaries

Pipeline services

Jemena proposes to offer two reference services, a haulage reference service and a meter data service. The haulage service replaces reference services in the earlier access arrangement period including a capacity reservation service, managed capacity service, throughput service, multiple delivery point service, and a tariff service. Jemena does not propose a gas swap service as a reference service. Jemena also proposes to offer legacy services, which are reference services that were available in the earlier access arrangement period and are offered at a premium price during the access arrangement period.

Jemena is required to amend its access arrangement proposal so as to specify ancillary services and legacy services as reference services.

Part A—Total revenue (building block components)

Capital base

Opening capital base

Jemena proposes an opening capital base of \$2366.9 million for the access arrangement period. Jemena's estimation of the proposed opening capital base is summarised in Table 1.

Table 1: Jemena's proposed opening capital base

	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Opening capital base	1965.5	2051.9	2132.3	2240.3	2282.1	2366.9
Add capital expenditure	86.3	118.7	99.7	97.5	113.6	
Add revaluation of assets	115.3	63.6	144.0	49.9	58.4	
Less depreciation	103.2	93.7	126.2	99.2	84.6	
Less capital contributions	6.2	4.3	7.8	6.0	3.6	
Less disposals	5.7	3.9	1.7	0.3	2.5	
Add reused redundant assets (end year)	0.0	0.0	0.0	0.0	3.4	
Closing capital base	2051.9	2132.3	2240.3	2282.1	2366.9	

Source: Jemena, *Access arrangement information*, August 2009, p. 125.

The AER proposes to approve an opening capital base of \$2277.9 million by:

- reducing capital expenditure by \$4.6 million (\$2004–05) due to the removal of mines subsidence
- amending the depreciation values in line with those approved by the IPART
- amending the methodology Jemena uses to adjust the capital base for inflation
- removing \$3.4 million for redundant assets.

Projected capital base

The AER does not consider that Jemena's forecast capital expenditure of \$885.2 million complies with r. 79 of the NGR. The total capital expenditure approved by the AER for the access arrangement period is \$575.9 million (\$2009–10).

Table 2: Jemena's proposed and approved capital expenditure for 2010–2015 (\$m, 2009–10, real)

	2009–10	2010–11	2011–12	2013–14	2014–15	Total
Market expansion						
Jemena proposed	64.7	75.6	80.7	76.8	73.2	371.0
AER approved	57.0	68.3	73.2	68.8	64.9	332.2
System reinforcement/renewal/replacement						
Jemena proposed	82.7	71.4	69.0	69.9	88.0	381.0
AER approved	33.2	29.9	27.5	27.9	28.4	146.9
Non-system assets						
Jemena proposed	25.7	20.1	18.1	34.2	35.0	133.2
AER approved	20.4	15.9	13.3	23.2	24.0	96.8
Total capital expenditure						
Jemena proposed	173.1	167.1	167.8	180.9	196.2	885.2
AER approved	110.6	114.1	114.0	119.9	117.3	575.9

Jemena proposes a projected capital base of \$3041.5 million, which is summarised in Table 3.

Table 3: Jemena's projected capital base (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	2366.9	2503.8	2629.5	2756.2	2893.8
Add capital expenditure	175.1	173.1	178.0	196.5	218.1
Add revaluation of assets	58.2	61.4	64.5	67.7	71.2
Forecast depreciation	89.4	100.2	109.9	120.7	135.8
Capital contributions	4.0	6.4	3.5	3.3	3.2
Disposals	3.0	2.3	2.4	2.5	2.7
Closing capital base	2503.8	2629.5	2756.2	2893.8	3041.5

Source: Jemena, *Access arrangement information*, August 2009, p. 127.

In addition to adjustments to forecast capital expenditure, the AER requires Jemena to amend the escalators it applies to estimate its proposed capital expenditure for more up-to-date forecasts and to remove any double counting of inflation.

Further, Jemena is required to amend its approach of estimating inflation to adjust the capital base for inflation during the access arrangement period.

Depreciation

The AER approves Jemena's methodology to estimate depreciation and considers the depreciation schedule meets the requirements of the NGR.

Rate of return

Jemena proposes the use of a pre-taxation nominal weighted average cost of capital (WACC) to determine the rate of return, including the use of the FFM to establish the return on equity. Jemena's proposed WACC parameters results in a nominal vanilla WACC of 11.21 per cent.

The AER requires Jemena to use a post-taxation framework for determining total revenue and the return on equity is to be estimated using the Sharpe–Lintner CAPM instead of the FFM. The AER requires Jemena to reduce the proposed nominal vanilla WACC to 10.11 per cent based on the amendments required to the nominal risk-free rate, equity beta and debt risk premium. The risk-free rate is determined based on the specified averaging period which will be updated by the AER closer to the final decision. The AER also requires Jemena to amend its inflation forecast. Table 4 summarises the proposed and approved WACC parameter values.

Table 4: WACC parameters

Parameter	Jemena's proposal	AER's draft decision
Nominal risk-free rate (%)	5.60	5.52 ^d
Inflation (%)	2.38	2.47 ^c
Real risk-free rate (%)	3.15	2.98 ^d
Equity beta ^a	N/A	0.8
Market beta ^b	0.59	N/A
Growth beta ^b	0.48	N/A
Size beta ^b	0.30	N/A
Market risk premium ^c (%)	6.50	6.50
Growth risk premium ^c (%)	6.24	N/A
Size risk premium ^c (%)	-1.23	N/A
Debt risk premium (%)	5.04	4.32 ^d
Debt to total assets (gearing) (%)	60	60
Pre-taxation nominal WACC (%)	12.63	N/A
Nominal return on equity (%)	12.06	10.72 ^d
Nominal return on debt (%)	10.64	9.84 ^d
Nominal vanilla WACC (%)	11.21	10.19 ^d
Gamma (utilisation of imputation credits)	0.20	0.65

Source: AER analysis and Jemena, *Access arrangement information*, August 2009, p. 147.

- a: Equity beta is used in the CAPM but not used in the FFM.
- b: The FFM uses three beta values (market beta, growth beta and size beta) to predict equity returns not used in the CAPM.
- c: The FFM uses a market risk premium (MRP), a growth risk premium for high book-to-market firms, and a size risk premium for small firms compared to large firms whereas only MRP is used in the CAPM.
- d: These figures have been updated with data current to 23 December 2009, but should be considered indicative only. They will be updated by the AER for the final decision (in accordance with the averaging period set out in confidential appendix B).
- e: This figure will be updated by the AER for the final decision using the latest data from the RBA statement of monetary policy

Taxation

Jemena proposes using a pre-taxation framework.²¹ This approach does not use a taxation building block. Instead an effective taxation rate is estimated by analysing cash flows. The effective taxation rate is used to calculate a pre-taxation weighted average cost of capital which allows for the recovery of taxation costs. Estimating the effective taxation rate requires the establishment of a taxation asset base, which is established as at 1 July 1999 and rolled forward to 30 June 2010.²² Jemena proposes estimating taxation depreciation using the diminishing value method.²³ Jemena proposes to incorporate the value of imputation credits in estimating the effective taxation rate and proposes a gamma value of 0.2.

The AER does not approve Jemena's proposed pre-taxation framework nor does it approve the use of the diminishing value method to estimate taxation depreciation during earlier access arrangement periods. The AER requires the use of a post-taxation framework and the calculation of depreciation during earlier access arrangement periods based on a straight line depreciation method. The AER requires Jemena to incorporate the value of imputation credits in calculating the taxation building block under a post-taxation framework. The AER does not approve Jemena's proposed gamma value of 0.2 and requires it to use a gamma value of 0.65.

Incentive mechanism

Jemena proposes a 'market expansion' incentive mechanism. Under this mechanism, capital expenditure on network expansion into unreticulated areas is added to the speculative investment fund. If the capital expenditure is assessed by the AER to be conforming capital expenditure as defined in r. 79 of the NGR, it is not rolled into the capital base until five years after the commencement of the specific reticulation project.²⁴

The AER does not approve the proposed incentive mechanism.

Fixed principles

Jemena proposes a fixed principle requiring 18 months' notification before the AER can revoke the direction requiring Jemena to consolidate its access arrangements for its four covered pipelines. The AER approves this fixed principle.

Jemena also proposes fixed principles for its proposed annual tariff adjustment mechanism and proposed expansion mechanism. The AER does not approve these fixed principles.

Operating expenditure

Jemena proposes forecast total operating expenditure for the access arrangement period of \$735.1 million (\$2009–10), which is \$101.4 million (\$2009-10) or 16 per

21 Jemena, *Access arrangement information*, August 2009, p. 138.

22 Jemena, *Access arrangement information*, appendix 9.3, August 2009.

23 Jemena, *Access arrangement information*, appendix 9.3, August 2009, p. 5.

24 Jemena, *Access arrangement information*, August 2009, pp. 161–163.

cent higher than the estimated operating expenditure in the earlier access arrangement period.

The AER requires Jemena to reduce its forecast operating expenditure by \$122.7 million (\$2009–10, real) or 16.7 per cent to a total forecast operating expenditure of \$612.5 million (\$2009–10, real). This represents a decrease in real terms of approximately 3.4 per cent compared to the period 1 July 2005 to 30 June 2010.

Table 5 sets out Jemena’s proposed forecast operating expenditure and the AER’s draft decision for forecast operating expenditure.

Table 5: AER's conclusion on Jemena's forecast operating expenditure (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Jemena proposed operating expenditure						
Controllable costs	115.4	115.6	119.5	123.1	127.5	601.0
Non-controllable costs	18.8	22.9	29.7	30.8	32.0	134.2
Total operating expenditure ^a	134.1	138.4	149.2	154.0	159.4	735.1
AER draft decision operating expenditure						
Controllable costs	100.8	103.1	105.4	106.8	107.8	523.9
Non-controllable costs	17.4	17.5	17.7	17.8	18.0	88.5
Total operating expenditure ^a	118.2	120.7	123.1	124.7	125.8	612.5

Source: Jemena, *Access arrangement information*, August 2009, Table 6–1, p. 75; Jemena, *Access arrangement information*, August 2009, Table 6-6, p. 84; AER analysis.

a: Totals may not add up due to rounding.

Total revenue

Jemena’s proposed total revenue requirement for each year of the access arrangement period and X factors are set out in Table 6.

**Table 6: Jemena's proposed annual revenue requirements and X factors
(\$m, real, 2009–10 unless otherwise stated)**

	2010–11	2011–12	2012–13	2013–14	2014–15
Return on capital	302.2	311.4	319.5	327.7	336.7
Depreciation	30.5	37.0	42.3	48.2	57.4
Operating and maintenance	134.1	138.4	149.2	154.0	159.4
Corporate income taxation	na	na	na	na	na
Incentive mechanism payments	na	na	na	na	na
Total	466.8	486.9	511.0	529.9	553.5
X factor tariff revenue (%)^a					
Haulage reference service (%)	-34.3 ^b	-1.96	-1.96	-1.96	-1.96
Ancillary fees (%)	0.0	0.0	0.0	0.0	0.0
Meter data service (%)	-49 ^b	0.0	0.0	0.0	0.0

Source: Jemena, *Access arrangement information*, August 2009, p. 164, 201 and AER Public Forum, *Jemena presentation*, 23 September 2009, p. 23.

na: Not applicable.

a: Negative values for X indicate real price increases under the CPI-X formula.

b: X factor is P0.

The AER has estimated Jemena's total revenue over the access arrangement period to be \$2043.1 million (\$2009–10, real) compared to \$2548 million (\$2009–10, real) proposed by Jemena, based on its assessment of this expenditure against the relevant criteria for the building block components. The approved forecasts and relevant X factors are summarised in Table 7.

Table 7: AER's conclusion on Jemena's annual revenue requirements and X factors (\$m, real, 2009–10 unless otherwise stated)

	2010–11	2011–12	2012–13	2013–14	2014–15
Return on capital	231.6	233.5	234.9	236.3	237.5
Depreciation	29.9	35.5	40.6	44.4	50.4
Operating and maintenance	118.2	120.7	123.1	124.7	125.8
Corporate income taxation	10.3	10.8	11.1	11.6	12.4
Incentive mechanism payments	na	na	na	na	na
Total	390.0	400.4	409.7	417.0	426.1
X factor tariff revenue (%)^a					
Haulage reference service (%)	-1.23 ^b	-1.96	-1.96	-1.96	-1.96
Ancillary fees (%)	0.0	0.0	0.0	0.0	0.0
Meter data service (%)	-42.49	0.0	0.0	0.0	0.0
Smoothed revenue path	378.8	394.2	410.0	425.1	439.0

Source: Table 6 is based on information from Part A of the draft decision.

na: Not applicable.

a: Negative values for X indicate real price increases under the CPI-X formula.

b: X factor is P0 for the volume haulage reference service.

Part B—Tariffs

Demand forecasts

Jemena's demand forecasts for the access arrangement period are outlined in Table 8. These demand forecasts support Jemena's proposed capital expenditure and operating expenditure forecasts.

Table 8: Jemena's forecast demand and customer numbers for the access arrangement period (units as stated)

	2010–11	2011–12	2012–13	2013–14	2014–15
Volume Customers (no.)	1 107 756	1 146 749	1 187 836	1 223 755	1 255 664
Volume load (TJ)	32 435	32 480	33 187	34 010	34 769
Demand Customers (no.)	424	424	424	425	426
Demand load (TJ)	63 590	64 149	62 570	62 829	62 933
Total load	96 025	96 629	95 757	96 838	97 702

Source: Jemena, *Access arrangement information*, August 2009, pp. 42–43, 69 and Jemena, *Response to AER questions*, 20 October 2009, pp. 2.

no.: Number.

The AER does not consider that all of the assumptions underlying Jemena’s demand forecasts for volume and demand customers are adequately supported and it does not approve Jemena’s demand forecasts. The required amendments to Jemena’s demand forecasts are summarised in Table 9.

Table 9: AER's draft decision demand forecasts and customer numbers for the access arrangement period (units as stated)

	2010–11	2011–12	2012–13	2013–14	2014–15
Total volume load (GJ)	34 967	35 864	36 804	37 561	38 175
Total demand load (GJ)	65 870	66 330	66 791	67 252	67 713
Total load (GJ)	100 837	102 194	103 595	104 813	105 888

Reference tariffs

Jemena proposes two reference services: the haulage service and meter data service. Jemena divides customers for the haulage service into 24 demand tariff classes and two volume tariff classes. In relation to demand customers, Jemena has introduced a capacity first response tariff for customers who meet certain requirements.

The AER requires Jemena to delete the minimum bill requirement for demand customers, halve the demand forecasts for demand first response tariff classes that contain more than one customer, reduce the demand first response discount to 25 per cent, remove the premium associated with legacy services and remove provisions dealing with the introduction and withdrawal of reference tariffs.

On average, all tariffs increase by 2.28 per cent in 2010–11 and by 1.96 per cent in real terms for each of the remaining years of the access arrangement period. These estimates do not take into account the impact of cost pass throughs.

Tariff variation mechanism

Jemena proposes the following tariff variation mechanisms for the haulage reference service: a tariff basket annual tariff variation mechanism and a cost pass through mechanism. The tariff basket annual tariff variation mechanism adjusts for changes in the consumer price index (CPI), as well as an adjustment factor which accounts for unaccounted for gas (UAG), weather variations, licence fee changes and other events. The adjustment factor is not subject to a materiality threshold. The cost pass through mechanism specifies a number of events including regulatory events such as the National Energy Customer Framework, National Gas Connections Framework, STTM and climate change policy. The cost pass through mechanism will be subject to a materiality threshold.

Jemena proposes notification procedures for haulage reference tariff variations.

The AER requires Jemena to amend its annual tariff variation mechanism to remove the adjustment factor for events other than CPI and the X factor. Jemena is also required to amend the proposed cost pass through mechanism, including the definition of some events.

The AER also requires Jemena to amend the proposed notification procedures for reference tariff variations.

Part C–Non-tariff components

Terms and conditions

Jemena proposes a standard reference services agreement, which outlines the terms and conditions of access for the access arrangement period.

The AER outlines a number of minor amendments to the terms and conditions of access, including changes to the reference services agreement.

Queuing

Jemena’s proposed queuing policy states that the order of priority of supply is determined on a first come first served basis volume requested and whether it is a reference service.

Jemena has no obligation to include queuing requirements as its network is comprised of distribution pipelines. However, the AER has reviewed the queuing policy and proposes to approve it.

Extension and expansion requirements

Jemena proposes that all extensions and expansions will be taken to form part of its covered pipelines unless the AER declares otherwise.

The AER considers that whether a particular extension should be covered under the access arrangement will depend on whether the extension relates to a high pressure pipeline or a medium or low pressure pipeline, and the AER has proposed amendments to reflect this requirement. The AER accepts that expansions of pipeline capacity should be covered under the access arrangement.

Changing receipt and delivery points

Jemena proposes that users may change receipt and delivery points with prior written consent. The AER approves Jemena’s proposal subject to some minor amendments.

Acceleration of review submission date triggers

Jemena’s proposal does not contain a trigger event. The AER requires Jemena to amend its proposal to include trigger events.

Review dates

Jemena proposes and the AER approves a review submission date of 30 June 2014 and a revision commencement date of 1 July 2015.

1 Regulatory overview

The Australian Energy Regulator (AER) is responsible for the economic regulation of covered natural gas distribution pipelines in all states and territories (except WA). The AER's functions and powers are set out in the National Gas Law (NGL) and the National Gas Rules (NGR).

Jemena Gas Networks (NSW) Ltd's (Jemena) access arrangement for 1 July 2005 to 30 June 2010 inclusive (earlier access arrangement) is a transitional access arrangement in accordance with schedule 1 of the NGR. This means that the transitional arrangements set out in schedule 1 of the NGR apply to the review of Jemena's access arrangement proposal dated 25 August 2009 (access arrangement proposal) for the period 1 July 2010 to 30 June 2015 (access arrangement period).

1.1 National Gas Law

The NGL states that when performing or exercising an economic regulatory function or power, the AER must do so in a manner that will or is likely to contribute to the achievement of the national gas objective. The national gas objective is:

... to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interests of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.²⁵

The AER must take into account the revenue and pricing principles when exercising its discretion in approving or making those parts of an access arrangement relating to a reference tariff. The AER may also take the revenue and pricing principles into consideration in its performance or exercise of any other economic regulatory function or power where it considers this appropriate.²⁶

1.2 National Gas Rules

The NGR sets out the provisions the AER must apply in exercising its regulatory functions and powers when making the draft decision on Jemena's access arrangement proposal.

1.3 National Energy Customer Framework

The Ministerial Council on Energy Standing Committee of Officials released the Second Exposure Draft of the National Energy Customer Framework (NECF) on 27 November 2009.²⁷ The NECF includes completed rule provisions for the new gas connections framework.²⁸ The details of the final framework, the timing of the new regulatory framework and transitional provisions that may apply are not yet finalised and it is uncertain what impact, the new framework might have on access

25 NGL, s. 23.

26 NGL, s. 28. The revenue and pricing principles are set out in NGL, s. 24.

27 Ministerial Council on Energy Standing Committee of Officials, *Second Exposure Draft of the National Energy Customer Framework*, viewed 15 January 2010, <<http://www.ret.gov.au/Documents/mce/quicklinks/bulletins.html>>, bulletin No. 170.

28 Ministerial Council on Energy Standing Committee of Officials, *Explanatory material, National Energy Customer Framework, second exposure draft*, November 2009, attachment A, section a.1, paragraph 5.

arrangements. Rule 65 of the NGR allows variations of applicable access arrangements and is available to service providers if changes to the access arrangement are required following the introduction of the NECF.

2 Pipeline services

2.1 Introduction

Jemena submits that the access arrangement proposal consolidates the terms of access of its four covered pipelines²⁹ by which it provided services in the period 1 July 2005 to 30 June 2010 inclusive (earlier access arrangement period).³⁰ The access arrangement proposal includes the reclassified Wilton to Newcastle (Northern trunk) and Wilton to Wollongong (Southern trunk) pipelines.³¹

Jemena states that it proposes to offer two reference services, two non-reference services and legacy services.³² Jemena does not state whether its legacy services or its ancillary services³³ are reference services or not.

2.2 Regulatory requirements

Rule 48(1) of the NGR provides that a full access arrangement must specify certain information for pipeline services, including reference services. Pipeline services include haulage services, interconnection services and ancillary services.³⁴ Reference services are defined as pipeline services that are likely to be sought by a significant part of the market.³⁵

An access arrangement must:

- identify the pipeline to which the access arrangement relates and a website where a description of the pipeline can be found
- describe the pipeline services the service provider proposes to offer
- specify the reference services
- specify the reference tariff for each reference service.

In addition, r. 101(1) of the NGR provides that a full access arrangement must specify all reference services.

Rule 109(1) of the NGR provides that a scheme pipeline service provider must not make it a condition of the provision of a particular service to a prospective user that

29 These four pipelines are: (i) the NSW distribution system; (ii) the Central West distribution system; (iii) Wilton–Newcastle trunk; and (iv) Wilton–Wollongong trunk see Jemena, *Access arrangement information*, pp. 1–2; Jemena, *Access arrangement proposal*, clause 10.1; AER, *Decision and statement of reasons*, 9 June 2009, p. 1.

30 Jemena, *Access arrangement information*, pp. 1–2, 16.

31 National Competition Council, *Jemena pipeline reclassification: Final decision and statement of reasons*, 29 June 2009.

32 Jemena, *Access arrangement proposal*, August 2009, pp. 5–9.

33 Jemena, *Access arrangement information*, August 2009, pp. 172–173.

34 NGL, s. 2.

35 NGR, r. 101.

the prospective user accept another non-gratuitous service from the service provider, unless the bundling of services is reasonably necessary.

2.3 Pipeline services

The AER is satisfied that Jemena identifies the pipelines which are the subject of the access arrangement proposal and includes a reference to a website at which a description of the network can be inspected.³⁶ This meets the requirements of r. 48(1)(a) of the NGR.

Further, the AER notes that sections 13.4–13.5.3 of the Jemena Gas Networks (NSW) Ltd access arrangement information, 25 August 2009 (access arrangement information) set out a description of the pipeline services³⁷ to be offered as required by r. 48(1)(b) of the NGR.³⁸

2.3.1 Reference services

Jemena's proposal

Jemena proposes to provide two reference services:

- a haulage service
- a meter data service.³⁹

Jemena introduces a reference services agreement that contains the terms and conditions—but not the tariffs⁴⁰—on which it will supply its reference services. Jemena submits that this forms a part of its access arrangement proposal.⁴¹

Haulage service

Jemena submits that its haulage service transports gas through the network to a single eligible delivery point for the use of a single customer.⁴² It submits that this service is required by its entire customer base and accordingly meets the requirements of r. 101(2) of the NGR and represents a reference service.⁴³

36 Jemena, *Access arrangement proposal*, August 2009, pp. 1, 6.

37 A 'pipeline service' is defined in s. 2 of the NGL as:

- (a) a service provided by means of a pipeline, including—
 - (i) a haulage service (such as firm haulage, interruptible haulage, spot haulage and backhaul); and
 - (ii) a service providing for, or facilitating, the interconnection of pipelines; and
- (b) a service ancillary to the provision of a service referred to in paragraph (a), but does not include the production, sale or purchase of natural gas or processable gas'.

38 Jemena, *Access arrangement proposal*, August 2009, pp. 168–173.

39 Jemena, *Access arrangement information*, August 2009, pp. 168–170. Jemena, access arrangement proposal, August 2009, schedule 3, clause 3 regarding haulage and clause 17 regarding meter data services.

40 See Jemena, *Access arrangement proposal*, August 2009, schedule 2, pp. 50–61.

41 Jemena, *Access arrangement proposal*, August 2009, schedule 3, p. 62.

42 Jemena, *Access arrangement proposal*, August 2009, p. 5.

43 Jemena, *Access arrangement information*, August 2009, p. 169.

The haulage service supersedes the following six separate reference services provided by Jemena in the earlier access arrangement period: (i) tariff service; (ii) capacity reservation service; (iii) managed capacity service; (iv) throughput service; (v) multiple delivery point service; and (vi) gas swap service.⁴⁴ Jemena submits that the six reference services reflected its traditional segmentation of the market and not tariff classes.⁴⁵ Jemena submits that consolidating the six services into one haulage service aids administrative simplicity and reduces transaction costs.⁴⁶

Meter data reference service

Jemena offers a meter data reference service.⁴⁷ The meter data service provides meter reading and on-site data and communication equipment to a delivery point.⁴⁸ Jemena will read the meter at a delivery point in respect of which a user (that is to say, a retailer or direct user) has entered into a reference services agreement.⁴⁹

Jemena submits that because the meter data reference service is required by all users to measure the amount of gas taken, it meets the requirements of r. 101(2) of the NGR and represents a reference service.⁵⁰

Jemena submits that supply of its haulage service is conditional on users acquiring its meter data service.⁵¹ It submits that it is reasonably necessary to provide the meter data service as a non-gratuitous bundled service because meter reading and data processing are required to enable billing for the haulage service.⁵²

The reference services agreement provides that a request for Jemena's haulage service will be deemed to also be a request for its meter data service.⁵³ However, once the meter data service becomes contested⁵⁴, Jemena will cease to offer the meter data service as a reference service⁵⁵ but will continue to offer it⁵⁶ under the terms of the reference services agreement.⁵⁷ Jemena submits that bundling haulage and meter data reference services does not preclude their unbundled provision⁵⁸ because any user can

44 Jemena, *Access arrangement information*, August 2009, pp. 173, 223.

45 Jemena, *Access arrangement information*, August 2009, p. 168.

46 Jemena, *Access arrangement information*, August 2009, p. 223.

47 Jemena, *Access arrangement information*, August 2009, pp. 169–170.

48 Jemena, *Access arrangement information*, August 2009, p. 169.

49 Jemena, *Access arrangement proposal*, August 2009, section 2.2, clause B(b). The Reference Services Agreement forms schedule 3 to the access arrangement proposal (Schedule 3).

50 Jemena, *Access arrangement information*, August 2009, p. 170.

51 Jemena, *Access arrangement proposal*, August 2009, section 2 A(c), p. 6 states: 'The Haulage Reference Service is only available where the Haulage Reference Service is taken in conjunction with the Meter Data Service (where the Service Provider provides the Meter Data Service as a reference service).'

52 Jemena, *Access arrangement information*, August 2009, p. 169.

53 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 17.1(b), p. 52.

54 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 1, see definition of 'Meter Data Service Date', p. 9.

55 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clauses 17.1(d)(iii) and 17.3, pp. 52, 55.

56 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 17.3(b), p. 55.

57 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 17.2, pp. 55–56. See also clause 18 which applies where Jemena does not supply a meter data service or a user does not take Jemena's meter data service.

58 Jemena, *Access arrangement information*, August 2009, p. 169.

negotiate for access to a service and have recourse to binding dispute resolution process.⁵⁹

AER's analysis and considerations

Reference services

A full access arrangement must specify all reference services.⁶⁰ The term 'Reference Service' is defined in section 1 of Jemena's reference services agreement as the haulage reference service and the meter data service. The meter data service only represents a reference service until it becomes contestable.⁶¹

The AER is satisfied that the haulage reference service and the meter data reference service are likely to be sought by a significant part of the market and are reference services.⁶² The AER notes that the haulage reference service replaces multiple reference services in the earlier access arrangement. The AER is also satisfied that Jemena's specification of the haulage and meter data reference services meet the requirements of r. 48(1)(c) of the NGR.

Prohibition of bundling of services

The AER is satisfied that it is currently reasonably necessary for Jemena to provide its haulage service in conjunction with the non-gratuitous meter reading service so that it can read meters, process data and bill for its haulage service.⁶³

2.3.2 Non-reference services

Jemena's proposal

Jemena proposes two non-reference services:

- the interconnection of embedded network services⁶⁴
- negotiated services.⁶⁵

Both of these services were offered in the earlier access arrangement period. Both of these services and the associated terms and conditions and tariffs are subject to negotiation⁶⁶ between Jemena and prospective users.⁶⁷

59 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 13.4, p. 169.

60 A 'reference service' is defined in r. 101(2) of the NGR to be a pipeline service that is likely to be sought by a significant part of the market.

61 See the definition of 'Meter Data Service Date' in Jemena, *access arrangement proposal*, August 2009, schedule 3, pp. 9.

62 NGR, r. 101(2).

63 Jemena, *Access arrangement information*, August 2009, p. 169.

64 Jemena, *Access arrangement proposal*, August 2009, clause 2.3, section A, pp. 7–8.

65 Jemena, *Access arrangement proposal*, August 2009, clause 2.3, section B, p. 8.

66 Under chapter 6 of the NGL, a prospective user can seek a determination regarding a dispute over the terms and conditions of access to a pipeline service (including non-reference service) provided by means of a covered pipeline.

67 Jemena, *Access arrangement proposal*, August 2009, clauses 2.3A and 2.3B, pp. 8–9.

Submissions

EnergyAdvice Pty Ltd's (EnergyAdvice) submission broadly supports the simplified reference services proposed by Jemena⁶⁸ but notes that Jemena will not provide a trunk negotiated service.⁶⁹ It requests a continuation of the trunk negotiated service.⁷⁰

The Independent Pricing and Regulatory Tribunal (IPART) required Jemena to include a separate trunk only negotiated service in the earlier access arrangement under section 3.2 of the National Third Party Access Code for Natural Gas Pipeline Systems (Code).⁷¹

AER's analysis and considerations

The AER has no information before it to suggest that the interconnection of embedded network services or negotiated services are likely to be sought by a significant part of the market. In view of this, the AER does not consider that these services represent reference services within the meaning of r. 101(2) of the NGR.

Conclusion

The AER notes that Jemena proposes to consolidate its reference services but that it will retain a negotiated service. The issue of relevant tariffs and tariff classes for the reference services is considered in chapter 12.

2.3.3 Ancillary services

Jemena's proposal

Jemena submits that it undertakes certain activities for users that are ancillary to the reference services.⁷² Jemena levies ancillary fees for these services.⁷³ These are:

- requests for services—this relates to collating the information provided and writing a letter of offer to a user or prospective user when they request a new, additional or changed service
- special meter reads—this relates to meter reading services requested by a user or prospective user rather than a regular meter reading service for billing purposes
- temporary disconnections—this relates to the disconnection of meters at the request of the user and includes the subsequent reconnection charge
- permanent disconnections—this relates to the disconnection of meters where the user requests that the delivery station not be moved or removed

68 EnergyAdvice, *Joint submission to the AER on the Jemena gas networks (NSW) revised access arrangement – August 2009*, 10 November 2009, p. 5 (EnergyAdvice, *Submission to the AER*, 10 November 2009).

69 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 9.

70 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 10.

71 IPART, *Final decision: revised access arrangement for AGL Gas Networks*, April 2005, p. 28.

72 Jemena, *Access arrangement information*, August 2009, p. 12.

73 Jemena, *Access arrangement information*, August 2009, p. 12.

- decommissioning and meter removals—this relates to the permanent decommissioning of a network connection where a request is made for the removal of aboveground gas infrastructure.⁷⁴

Submissions

AGL Energy (AGL) submits that timeframes and service levels need to be included in the access arrangement regarding Jemena’s actioning, completion and notification to users.⁷⁵

AER’s analysis and considerations

The AER notes that there is some ambiguity in Jemena’s access arrangement proposal and access arrangement information regarding the classification of ancillary services. Jemena refers to these services in terms of their charges—as ‘ancillary fees’⁷⁶—and not as services in or of themselves.

All of the proposed ancillary services except decommissioning and meter removal were included in the earlier access arrangement.⁷⁷ The residential and business disconnection services provided in the earlier access arrangement period⁷⁸ have been replaced with temporary and permanent disconnection services.⁷⁹

The AER notes that the IPART reviewed ancillary services as one of three types of ‘other charges’—consisting of overrun charges, gas balancing charges and charges for ancillary services—in its review of the earlier access arrangement proposal under the Code.⁸⁰ The AER considers that in responding to requests for services, providing special meter reads, providing temporary and permanent disconnection services, decommissioning, and carrying out meter removals⁸¹ Jemena is providing services ancillary to the provision of a pipeline service within the meaning of section 2 of the NGL. This means that if ancillary services are likely to be sought by a significant part of the market, they are reference services and must be specified in the access arrangement proposal.⁸²

Rule 101 of the NGR does not specify a timeframe within which services are likely to be sought by a significant part of the market. Given the nature of Jemena’s ancillary services, the AER considers that they are likely to be sought by a significant part of the market at some point in time during the course of the access arrangement period and are accordingly reference services. This approach is consistent with that taken by

74 Jemena, *Access arrangement information*, August 2009, p. 172–173.

75 AGL Energy Limited, *JGN Access arrangement 2010–2015*, 10 November 2009, p. 27.

76 Jemena, *Access arrangement information*, August 2009, p. 172–173; *Access arrangement proposal*, August 2009, p. 60–61; *Reference services agreement*, August 2009, clause 1.1, p. 1.

77 AGL Gas Networks, *Access arrangement for NSW network*, June 2005, clause 3.15, p. 61.

78 AGL Gas Networks, *Access arrangement for NSW network*, June 2005, clause 3.15, p. 61.

79 Jemena, *Access arrangement information*, August 2009, pp. 172–173.

80 IPART, *Final decision: revised access arrangement for AGL Gas Networks*, April 2005, p. 160.

81 Jemena, *Access arrangement information*, June 2005, clause 13.5.3, pp. 172–173.

82 NGR, r. 48(1)(c).

the AER in its recent draft decisions for ActewAGL and Country Energy.⁸³ The AER considers that these services are reference services in accordance with r. 101 of the NGR.

In considering AGL's submission, the AER has assessed whether the information stated in schedule 2 of the access arrangement proposal⁸⁴ is consistent with the national gas objective.⁸⁵ It is satisfied that the level of information set out in section H of schedule 2 is sufficient to allow the parties to understand their obligations and that there is no need to specify timeframes or service levels.

The AER does not propose to approve Jemena's specification of reference services as it does not comply with r. 48(1)(c) of the NGR. This is because the access arrangement proposal does not specify all reference services. Before the access arrangement proposal can be accepted, the AER requires Jemena to make the following amendments:

Amendment 2.1: amend the access arrangement proposal to delete the definition of 'Reference Service' in clause 1.1 of Schedule 3 and replace it with the following:

Reference Service means the Ancillary Reference Services, the Legacy Services, the Haulage Reference Service, and, until the Meter Data Service Date, the Meter Data Service;

Amendment 2.2: amend the access arrangement proposal to delete the definition of 'Reference Service' in clause 1.1 of Schedule 1 and replace it with the following:

Reference Service means:

- (a) the Ancillary Reference Services; or
- (b) the Haulage Reference Service; or
- (c) Legacy Services; or
- (d) the Meter Data Service.

Amendment 2.3: amend the access arrangement proposal to include the following in clause 1.1 of Schedule 3:

Ancillary Reference Service means the ancillary services described at H of Schedule 2 to the Access Arrangement.

Amendment 2.4: amend the access arrangement proposal and the access arrangement information to reflect amendments 2.1–2.3.

83 AER, *ActewAGL access arrangement proposal for the ACT, Queanbeyan and Palerang gas distribution network 1 July 2010–2015*, November 2009 and AER, *Country Energy Wagga Wagga natural gas distribution network 1 July 2010–2015*, November 2009.

84 Jemena, *Access arrangement proposal*, August 2009, pp. 60–61.

85 NGL, s. 23.

2.3.4 Legacy services

Jemena's proposal

Jemena proposes to offer legacy services. The classification of these services in Jemena's access arrangement proposal is unclear. Jemena does not outline if these legacy services are reference services or non-reference services.

Jemena submits that legacy services are reference services requested during the earlier access arrangement period.⁸⁶ It submits that legacy reference services will not be made available to new customers in the access arrangement period.⁸⁷ Jemena submits that it expects that current users of legacy services will cease to acquire them and instead switch to Jemena's consolidated reference services in the access arrangement period by entering into Reference services agreements.⁸⁸ Jemena submits that the 40 per cent cost increase for legacy services is based on the average increase in rates calculated by Jemena between 2010 and 2011, with addition of a 5 per cent premium.⁸⁹ Jemena submits that the 5 per cent price premium provides a price incentive for users to make the intended transition to the new reference services and also to take some account of administrative and billing costs as well as costs associated with necessary updates of existing legacy reference services agreements.⁹⁰ If a user wishes to continue to obtain supply of a legacy service, Jemena will supply this in accordance with the terms and conditions of the contract as long as:

- the relevant contract remains in force and is not terminated by either party
- the charges payable under the relevant contract for the supply of each legacy service are met.⁹¹

Jemena submits that where a contract specifies a price for supply of a legacy service independently of the access arrangement proposal, that price will continue to apply, escalated in accordance with the contract.⁹²

Jemena proposes a transition mechanism to facilitate its customers in transitioning from legacy reference services to its new consolidated reference services.⁹³

Submissions

Origin submits that Jemena proposes to increase tariffs for legacy services by 40 per cent under the new access agreement as an incentive for customers to move to the new services. Origin submits greater clarity about the implications of this and the

86 Jemena, *Access arrangement proposal*, August 2009, clause 2.4(a), p. 8.

87 Jemena, *Access arrangement information*, August 2009, p. 170.

88 Jemena, *Access arrangement information*, August 2009, p. 170. Jemena, *Access arrangement proposal*, August 2009, clause 2.4(b), p. 8.

89 Jemena, *Access arrangement information*, August 2009, p. 172.

90 Jemena, *Access arrangement information*, August 2009, p. 172.

91 Jemena, *Access arrangement proposal*, August 2009, clause 2.4(c), pp. 8–9.

92 Jemena, *Access arrangement proposal*, August 2009, clause 2.4(d), p. 9.

93 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 11.4, pp. 38–41.

justification for the 40 per cent increase is required.⁹⁴ AGL also requests that it be provided with the basis for the 40 per cent escalation for legacy services.⁹⁵

At the Roundtable Discussion on 27 November 2009 (the Roundtable Discussion), Jemena stated that the price increase includes the underlying price change of 34 per cent in the access arrangement period for its increase in total revenue and a 5–6 per cent increase designed to create incentives for customers to switch to the new services. Jemena submits that this reflects additional costs and inefficiencies that Jemena will bear in continuing to provide services under contracts pre-dating the access arrangement.⁹⁶

AER's analysis and considerations

The AER notes that Jemena states that it expects that all users will switch from the reference services it provided in the earlier access arrangement period to reference services provided under Jemena's reference services agreement.⁹⁷ The reference services of the earlier access arrangement period will be subject to a new billing arrangement and an increase of 40 per cent of the price charged on 30 June 2010 with effect as of 1 July 2010 under Jemena's proposal.⁹⁸ The AER notes that Jemena has not been provided with detailed reasoning outlining why Jemena anticipates that legacy services will not be sought by a significant part of the market⁹⁹ or provided a substantiated analysis of the premium of 5–6 per cent. The issue of the premium is discussed in chapter 12.

On the understanding that the legacy services are not new services but are the reference services offered by Jemena in the earlier access arrangement period, the AER cannot accept that these services will not be sought by a significant market.

Conclusion

On the basis of the information submitted, the AER considers that the legacy services are likely to be sought by a significant part of the market. The AER therefore considers that legacy services are reference services within the meaning of r.101(2) of the NGR.

In this context, the AER also notes that 'Legacy Service Agreement' as referred to in clause 2.4(c)(ii) of the access arrangement proposal is not defined.¹⁰⁰

The AER does not propose to approve Jemena's specification of legacy services as it does not comply with r. 48(1)(c) or r. 48(1)(d) of the NGR. This is because it does not specify legacy services as a reference service and does not specify a tariff or the other terms and conditions on which this service will be provided.

94 Origin, *Jemena gas networks access arrangement proposal*, 10 November 2009, p. 1 (Origin, *Submission to the AER*, 10 November 2009).

95 AGL, *JGN Access arrangement 2010–2015*, appendix, 10 November 2009, p. 9.

96 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, p. 15.

97 Jemena, *Access arrangement information*, August 2009, p. 170.

98 Jemena, *Access arrangement proposal*, August 2009, clause 2.4(c)(ii).

99 NGR, r. 101.

100 Jemena, *Access arrangement proposal*, August 2009, p. 8.

Before the access arrangement proposal can be accepted, Jemena must make amendments 2.1, 2.2 and 12.4 set out in the draft decision and make the following further amendments:

Amendment 2.5: amend the access arrangement proposal and the access arrangement information to specify the other terms and conditions on which the legacy services will be provided.

Amendment 2.6: amend the access arrangement proposal to include the following in section 1.1 of Schedule 1:

Legacy Service Agreement means an agreement between the Service Provider and the User for the provision of a Legacy Service.

Part A – Total revenue (building block components)

3 Capital base

3.1 Introduction

This chapter sets out the AER's consideration and analysis of the capital base that Jemena proposes for the access arrangement period. It includes a consideration of the opening capital base which forms the initial value of the projected capital base.

The projected capital base is an input into the return on the projected capital base and depreciation. This chapter considers:

- the opening capital base including the past capital expenditure proposed by Jemena for the earlier access arrangement period
- the projected capital base, including forecast capital expenditure that Jemena proposes for the access arrangement period.

The AER's consideration of Jemena's depreciation schedule is set out in chapter 4 of the draft decision.

3.2 Regulatory requirements

3.2.1 Opening capital base

Clause 3(2) of schedule 1 of the NGR provides that an agreement by the relevant regulator under section 8.21 of the Code that actual or forecast new facilities investment meets or will meet the requirements of section 8.16(a) of the Code will be taken to be:

- in the case of actual expenditure – a decision by the AER under r. 79 of the NGR to the effect that the capital expenditure conforms with the new capital expenditure criteria
- in the case of forecast capital expenditure – a determination by the AER under r. 80 of the NGR that, if the capital expenditure is made in accordance with the conditions of the agreement, it will meet the new capital expenditure criteria.

Rules 72(1)(a)(i) and (b) of the NGR provide that, if the access arrangement period commences at the end of an earlier access arrangement period, the access arrangement information for a full access arrangement proposal must include:

- capital expenditure (by asset class) over the earlier access arrangement period
- how the capital base is arrived at and a demonstration of how the capital base increased or diminished over the previous access arrangement period.

Rule 77(2) of the NGR provides that if an access arrangement period follows immediately on the conclusion of a previous access arrangement period, the opening capital base for the later access arrangement period is to be:

- (a) the opening capital base as at the commencement of the earlier access arrangement period (adjusted for any difference between estimated and actual capital expenditure included in that opening capital base);

plus:

- (b) conforming capital expenditure made, or to be made, during the earlier access arrangement period;

plus:

- (c) any amounts to be added to the capital base under rule 82, 84 or 86;

less:

- (d) depreciation over the earlier access arrangement period (to be calculated in accordance with any relevant provisions of the access arrangement governing the calculation of depreciation for the purpose of establishing the opening capital base); and

Note:

See rule 90.

- (e) redundant assets identified during the course of the earlier access arrangement period; and
- (f) the value of pipeline assets disposed of during the earlier access arrangement period.

3.2.2 Projected capital base

Rule 72(1)(c) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the projected capital base over the access arrangement, including:

- (i) a forecast of conforming capital expenditure for the period and the basis for the forecast; and
- (ii) a forecast of depreciation for the period including a demonstration of how the forecast is derived on the basis of the proposed depreciation method;

Rule 78 of the NGR provides that the projected capital base for a particular period is:

- (a) the opening capital base;

plus:

- (b) forecast conforming capital expenditure for the period;

less:

- (c) forecast depreciation for the period; and
- (d) the forecast value of pipeline assets to be disposed of in the course of the period.

Rule 79(1) of the NGR provides that conforming capital expenditure is capital expenditure that conforms with the following:

- the capital expenditure must be such that it would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services
- the capital expenditure must be justifiable, that is, it must be necessary having regard to one of the following grounds stated in r. 79(2) of the NGR:¹⁰¹
 - (i) to maintain and improve the safety of services; or
 - (ii) to maintain the integrity of services; or
 - (iii) to comply with a regulatory obligation or requirement; or
 - (iv) to maintain the service provider's capacity to meet levels of demand for services existing at the time the capital expenditure is incurred (as distinct from projected demand that is dependent on an expansion of pipeline capacity).

3.2.3 Opening capital base for the next access arrangement period

Rule 90(1) of the NGR provides that a full access arrangement must contain provisions for the calculation of depreciation for establishing the opening capital base for the next access arrangement period. Rule 90(2) of the NGR requires that the basis for establishing depreciation i.e. using actual or forecast capital expenditure for the next access arrangement period needs to be determined.

3.2.4 Capital redundancy

Rule 85(1) of the NGR provides that a full access arrangement may include (and the AER may require it to include) a mechanism to ensure that assets that cease to contribute in any way to the delivery of pipeline services are removed from the capital base. Rule 85(2) of the NGR provides that a reduction of the capital base in accordance with such a mechanism may only take effect from the commencement of the first access arrangement period to follow the inclusion of the mechanism in the access arrangement or the commencement of a later access arrangement period.

Rule 85(4) of the NGR provides that before requiring or approving a capital redundancy mechanism, the AER must take into account the uncertainty such a mechanism would cause and the effect the uncertainty would have on the service provider, users and prospective users.

Clause 3(13) of schedule 1 of the NGR provides that a mechanism approved in a transitional access arrangement for removing redundant capital under section 8.27 of the Code, will be taken to be a corresponding mechanism under rule 85 of the NGR.

¹⁰¹ NGR, r. 79(2)(c).

3.2.5 Key performance indicators

Rule 72(1)(f) of the NGR provides that the access arrangement information for a full access arrangement proposal must include key performance indicators to be used by the service provider to support expenditure to be incurred over the access arrangement period.

3.3 Jemena's proposal

3.3.1 Opening capital base

Jemena proposes an opening capital base of \$2366.9 million (\$nominal) for the access arrangement period. Table 3.1 shows Jemena's calculation of the opening capital base for the access arrangement period.

Table 3.1: Jemena's proposed opening capital base (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Opening capital base	1965.5	2051.9	2132.3	2240.3	2282.1	2366.9
Add capital expenditure	86.3	118.7	99.7	97.5	113.6	
Add revaluation of assets ^a	115.3	63.6	144.0	49.9	58.4	
Less depreciation	103.2	93.7	126.2	99.2	84.6	
Less capital contributions	6.2	4.3	7.8	6.0	3.6	
Less disposals	5.7	3.9	1.7	0.3	2.5	
Add reused redundant assets (end year)	0.0	0.0	0.0	0.0	3.4 ^b	
Closing capital base	2051.9	2132.3	2240.3	2282.1	2366.9	

Source: Jemena, *Access arrangement information*, August 2009, p. 125.

a: Jemena refers to adjustments to the capital base for inflation as 'revaluation of assets'.

b: Figure refers to redundant capital on the Wilton to Wollongong pipeline.

Jemena does not propose to make additions to its capital base from capital contributions by users during the earlier access arrangement period.¹⁰²

In rolling forward the capital base to 2010, Jemena has not included any conforming capital expenditure from a speculative capital expenditure account.¹⁰³

102 Jemena, *Access arrangement information*, August 2009, p. 130.

103 Jemena, *Access arrangement information*, August 2009, p. 125.

Jemena proposes annual amounts for disposals of assets to be deducted from the capital base in the earlier access arrangement.¹⁰⁴ Jemena proposes to replace a batch of regulators in 2009–10 and 2010–11.¹⁰⁵

3.3.1.1 Redundant assets

Jemena submits that in the IPART’s 2005 final decision,¹⁰⁶ the IPART identified \$3.4 million (\$nominal) redundant capital on the Wilton to Wollongong pipeline with a value that equated to 20 per cent of the value of the capital base of that pipeline as at 1 July 2005.¹⁰⁷ The decision was based on the IPART’s finding that there would be a significant reduction in utilisation of the pipeline following the commissioning of the Eastern Gas Pipeline (EGP).¹⁰⁸

Jemena proposes to include in the opening capital base the value of \$3.4 million (\$nominal) pipeline as a re-used redundant asset.¹⁰⁹

3.3.1.2 Capital expenditure

Jemena proposes to include conforming capital expenditure in the opening capital base of \$556.6 million (\$2009–10)¹¹⁰ as set out in Table 3.2. Jemena submits this value is below the forecast conforming capital expenditure of \$563.4 million (\$2009–10) approved by the IPART in the earlier access arrangement period.¹¹¹

Table 3.2: Forecast and actual/estimated capital expenditure for 2005–10 (\$m, 2009–10, real)

	2005–06	2006–07	2007–08	2008–09	2009–10	Total
Forecast (IPART approved)	141.5	117.7	113.2	98.6	92.6	563.4
Actual/estimated	99.6	131.7	108.3	101.3	115.6	556.6
Difference	41.9	–14.0	4.9	–2.7	–23.0	6.8

Source: Jemena, *Access arrangement information*, August 2009, Appendix 7.3, pp. 4–5.

Jemena separates its capital expenditure into market expansion, systems reinforcement/renewal/replacement and non-system costs. Jemena submits that the difference between forecast capital expenditure and actual capital expenditure in the earlier access arrangement period was due to:

104 Jemena, *Access arrangement information*, August 2009, p. 125.

105 Jemena, *Access arrangement information*, August 2009, p. 130.

106 IPART, *Final Decision: Revised access arrangement for AGL Networks*, April 2005.

107 Jemena, *Access arrangement information*, August 2009, p. 127.

108 Jemena, *Access arrangement information*, August 2009, p. 127.

109 Jemena, *Access arrangement information*, August 2009, pp. 126–128.

110 Based on the total nominal capital expenditure contained at Jemena, *Access arrangement information*, August 2009, p. 125 and the capital expenditure contained in the asset register that Jemena provides to the AER, the AER calculates that the correct amount to be \$542.0 million in \$2009–10.

111 Jemena, *Access arrangement information*, August 2009, pp. 47–49.

- a substantially lower number of new customers than forecast
- higher than forecast expenditure on:
 - replacement and renewal of ageing high pressure facilities¹¹²
 - the Sydney Primary Loop (SPL) security of supply project¹¹³
 - mines subsidence mitigation projects¹¹⁴
 - the upgrade of high pressure facilities required by the pressure upgrade to the Moomba to Sydney Pipeline (MSP).¹¹⁵

Jemena submits that capital expenditure on these four projects was partially offset by lower expenditure on system reinforcement projects due to substantially lower utilisation of the network than forecast and deployment of innovative technology to increase capacity of existing system and defer reinforcement requirements.¹¹⁶

There was no material variance in expenditure on non-system assets.¹¹⁷

In support of its capital expenditure for the earlier access arrangement Jemena submits a report by Parsons Brinckerhoff Australia Pty Limited (the PB report).¹¹⁸

3.3.1.3 Adjustment to the capital base for inflation

Jemena proposes to adjust its capital base for inflation in the earlier access arrangement period using actual inflation figures. For 2010, Jemena proposes using the inflation forecast published in the Reserve Bank of Australia's (RBA) statement of monetary policy in May 2009.¹¹⁹

3.3.2 Projected capital base

Jemena proposes a projected capital base of \$3041.5 million (\$nominal), which incorporates forecast capital expenditure of \$940.8 million (\$nominal) and depreciation of \$556 million (\$nominal) for the access arrangement period. The projected capital base is outlined in Table 3.3.

112 Jemena, *Access arrangement information*, August 2009, p. 50.

113 Jemena, *Access arrangement information*, August 2009, p. 50.

114 Jemena, *Access arrangement information*, August 2009, p. 50.

115 Jemena, *Access arrangement information*, August 2009, p. 50.

116 Jemena, *Access arrangement information*, August 2009, p. 50.

117 Jemena, *Access arrangement information*, August 2009, p. 50.

118 Jemena, *Access arrangement information*, August 2009, appendix 7.4.

119 Jemena, *Access arrangement information*, August 2009, pp. 124–125.

Table 3.3: Jemena's projected capital base (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Opening capital base	2366.9	2503.8	2629.5	2756.2	2893.8	na
Add capital expenditure	175.1	173.1	178.0	196.5	218.1	940.8
Add revaluation of assets	58.2	61.4	64.5	67.7	71.2	323.0
Forecast depreciation	89.4	100.2	109.9	120.7	135.8	556.0
Capital contributions	4.0	6.4	3.5	3.3	3.2	20.4
Disposals	3.0	2.3	2.4	2.5	2.7	12.9
Closing capital base	2503.8	2629.5	2756.2	2893.8	3041.5	na

Source: Jemena, *Access arrangement information*, August 2009, p. 127.

na: Not applicable.

Jemena proposes to recover non-conforming capital expenditure through users' contributions or surcharges.¹²⁰ For non-conforming capital expenditure not recovered through users' capital contributions or surcharges, Jemena proposes to maintain a speculative capital expenditure account.¹²¹

Jemena proposes to exclude capital contributions by users from its capital base.¹²²

Jemena proposes to dispose of some assets during the access arrangement period. Jemena submits that disposal of meters will vary from year to year in line with meter replacement expenditure.¹²³

3.3.2.1 Forecast capital expenditure

Jemena proposes conforming capital expenditure of \$885.2 million (\$2009–10) for the access arrangement period.¹²⁴ This is a 64 per cent increase on the actual expenditure during the earlier access arrangement period.¹²⁵

Jemena forecasts its capital expenditure initially in 2008–09 dollars and then adjusts it using real input cost escalators determined by the Competition Economics Group (CEG) (the CEG report).¹²⁶ In addition, Jemena submits the PB report to support its forecast capital expenditure for the access arrangement period.¹²⁷

120 Jemena, *Access arrangement proposal*, August 2009, p. 29.

121 Jemena, *Access arrangement proposal*, August 2009, p. 29.

122 Jemena, *Access arrangement information*, August 2009, p. 130.

123 Jemena, *Access arrangement information*, August 2009, p. 130.

124 Jemena, *Access arrangement information*, August 2009, p. 116.

125 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 32.

126 Jemena, *Access arrangement information*, p. 111 and Jemena, *Access arrangement information* appendix 6.4.

127 Jemena, *Access arrangement information*, August 2009, appendix 7.4.

Jemena proposes market expansion expenditure of \$371.0 million (\$2009–10) which is higher than market expansion expenditure in the earlier access arrangement period.¹²⁸ Jemena submits that the proposed market expansion projects are driven by demand and relate to projects postponed in the earlier access arrangement period because of lower than forecast demand.¹²⁹ Jemena proposes that projects previously postponed will be carried out in the access arrangement period.¹³⁰

Jemena proposes \$381.0 million (\$2009–10) of systems upgrade expenditure.¹³¹ Renewal and upgrade of facilities and meters account for most of the total expenditure for this category.¹³²

Jemena proposes capital expenditure of \$133.2 million (\$2009–10) for non-system assets.¹³³ Ninety-five per cent of non-system capital expenditure comprises IT and communications, and motor vehicles.¹³⁴ Jemena submits a report by KPMG to support its proposed capital expenditure for IT (the KPMG report).¹³⁵

Jemena’s proposed capital expenditure for the access arrangement period is set out in Table 3.4.

Table 3.4: Proposed capital expenditure for the access arrangement period (\$m, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Market expansion	64.7	75.6	80.7	76.8	73.2	371.0
System reinforcement/ renewal/replacement	82.7	71.4	69.0	69.9	88.0	381.0
Non–system assets	25.7	20.1	18.1	34.2	35.0	133.2
Total	173.1	167.1	167.8	181.0	196.2	885.2

Source: Jemena, *Access arrangement information*, August 2009, p. 116.

3.3.2.2 Adjustment of the capital base for inflation

Jemena proposes to adjust the projected capital base for inflation using the forecast rate of inflation used to calculate the nominal WACC for the years 2009–10 to 2014–15. Jemena proposes a forecast annual inflation rate of 2.38 per cent.¹³⁶

128 Jemena, *Access arrangement information*, August 2009, p. 116.

129 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 30.

130 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 30.

131 Jemena, *Access arrangement information*, August 2009, p. 116.

132 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 28.

133 Jemena, *Access arrangement information*, August 2009, p. 116.

134 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 29.

135 Jemena, *Access arrangement information*, August 2009, appendix 7.5.

136 Jemena, *Access arrangement information*, August 2009, p. 147.

3.3.3 Key performance indicators

Although Jemena does not submit any key performance indicators for capital expenditure in its access arrangement information, the PB report includes benchmarking analysis for Australian distribution gas companies. The PB report employs three measures:

- investment as a proportion of regulatory asset base¹³⁷
- comparison of expenditure per connection as a function of connection density (distance per customer)¹³⁸
- comparison of total expenditure as a function of composite size factor.¹³⁹

3.3.4 Opening capital base for the next access arrangement period

Jemena proposes to adopt a depreciation schedule that is based on forecast depreciation for establishing the opening capital base for the next access arrangement period.¹⁴⁰

3.3.5 Capital redundancy policy

Jemena proposes that the AER may reduce Jemena's capital base by an amount for:

- any assets that have ceased to contribute to the delivery of services¹⁴¹
- any assets that have been sold or disposed of by the service provider or the service provider has entered into a binding agreement for their sale or disposal.¹⁴²

3.4 Consultant's report

The AER engaged Wilson Cook & Co, engineering and management consultants, to review Jemena's proposed capital expenditure (the Wilson Cook report).¹⁴³ This includes a review of the capital expenditure for the earlier access arrangement period, as well as Jemena's forecast capital expenditure for the access arrangement period.

The Wilson Cook report finds that for the earlier access arrangement period and particularly for the access arrangement period there is:

- a lack of information in support of individual projects particularly business cases

137 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 14–15.

138 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 16.

139 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 16–17.

140 Jemena, *Access arrangement proposal*, August 2009, p. 10.

141 Jemena, *Access arrangement proposal*, August 2009, p. 30.

142 Jemena, *Access arrangement proposal*, August 2009, p. 30.

143 Wilson Cook, *Review of expenditure of ACT & NSW gas distributors: Jemena Gas Networks (NSW) Ltd*, December 2009 (Wilson Cook report).

- the efficiency of the proposed capital expenditures and the individual projects underpinning the proposal is not adequately demonstrated.¹⁴⁴

3.4.1 Capital expenditure in the earlier access arrangement period

The Wilson Cook report examines the variations over the earlier access arrangement period between actual and forecast capital expenditure.

3.4.1.1 Market expansion expenditure

For market expansion expenditure, the Wilson Cook report notes a significant underrun of \$74 million (\$2009–10) in the earlier access arrangement period, which Jemena attributes to a substantially lower number of new customer connections than forecast.¹⁴⁵ The Wilson Cook report notes the increase in unit rates may have been due to increases in:

- construction costs exceeding the rate associated with the Consumer Price Index (CPI), which in part was due to the clarification of responsibilities within the Occupational Health and Safety Act (OH&S Act) in 2006
- council restoration rates and the cost of obtaining council approvals
- compliance costs due to changed developer requirements for connection services.¹⁴⁶

The Wilson Cook report considers the market expansion expenditure reasonable in terms of scope and nature but is not able to attest to its cost efficiency due to the lack of detailed cost information provided by Jemena.¹⁴⁷

3.4.1.2 Other network expenditure

This capital expenditure category includes capacity development, security of supply, mines subsidence, renewal of mains and services, renewal and upgrading of other facilities, renewal and upgrading of meters and work for government authorities.

The Wilson Cook report notes a significant overrun of \$67.4 million (\$2009–10) in system, renewal and replacement expenditure. Jemena attributes this to higher than forecast expenditure on:

- replacement and renewal of ageing high pressure facilities
- the primary loop security supply project
- mines subsidence mitigation projects
- upgrading of high pressure facilities required by the increase in operating pressure in the MSP.¹⁴⁸

144 Wilson Cook report, pp. 40, 55, 70–71.

145 Wilson Cook report, p. 39.

146 Wilson Cook report, p. 42.

147 Wilson Cook report, p. 42.

The Wilson Cook report considers that mines subsidence works should not be added to the capital base because no new assets are created and the lives of existing assets are not extended.¹⁴⁹ The Wilson Cook report reviews the other network expenditures in the earlier access arrangement period and apart from mines subsidence considers the expenditure reasonable in terms of scope but it is unable to verify the cost efficiency of this capital expenditure. This is due to the lack of detailed cost information and lack of substantiation of the quantitative assessments of the benefits that arise from the capital expenditure.¹⁵⁰

3.4.1.3 Non system assets

This capital expenditure category includes plant and equipment, vehicles, IT, land, buildings, leasehold assets and access arrangement infrastructure.¹⁵¹

The Wilson Cook report notes that there is no material variation in expenditure although there is variation in the timing of expenditure.¹⁵² The Wilson Cook report reviews the non network expenditure and considers the expenditure may be reasonable, but is not able to verify the efficiency of the cost of these programmes due to a lack of information.¹⁵³

3.4.2 Forecast capital expenditure in the access arrangement period

The Wilson Cook report examines the forecast capital expenditure over the access arrangement period.¹⁵⁴

3.4.3 Market expansion expenditure

The Wilson Cook report reviews the proposed market expansion expenditure of \$371 million (\$2009–10) for the access arrangement period, which is an increase of 58 per cent from its level in the earlier access arrangement period.¹⁵⁵ The Wilson Cook report finds that the unit rates used to calculate market expansion expenditure are within the expected range and considers the market expansion works to be reasonable, but is not able to verify cost efficiency due to a lack of information.¹⁵⁶

3.4.3.1 Other network expenditure

The Wilson Cook report reviews the proposed capacity development expenditure of \$86 million (\$2009–10) for the access arrangement period, which is an increase of 179 per cent from the earlier access arrangement period. The Wilson Cook report considers that the capacity development works are reasonable in terms of scope and

148 Wilson Cook report, p. 39.

149 Wilson Cook report, p. 45.

150 Wilson Cook report, pp. 43–46.

151 Wilson Cook report, p. 48.

152 Wilson Cook report, p. 39.

153 Wilson Cook report, pp. 50–51.

154 Wilson Cook report, pp. 54–72.

155 Wilson Cook report, p. 55.

156 Wilson Cook report, p. 56.

timing, but it cannot verify cost efficiency of these programmes due to a lack of information.¹⁵⁷

The Wilson Cook report reviews the other components of the proposed reinforcement, renewal, replacement and replacement capital expenditure and notes increases to the expenditure when compared to the earlier access arrangement period. Except for mines subsidence, works related to integrity digs and integrity management and ad hoc mains and services renewals—which the Wilson Cook report considers should be omitted—the Wilson Cook report considers the works to be reasonable in terms of scope and timing, but is not able to verify cost efficiency due to a lack of information.¹⁵⁸

3.4.3.2 Non system assets

The Wilson Cook report reviews the proposed expenditure of \$133 million (\$2009–10) for the access arrangement period which is an increase of 170 per cent from its level in the earlier access arrangement period.¹⁵⁹ Other than leasehold improvements, the Wilson Cook report considers the IT plan and other expenditure items are reasonable in scope but it cannot verify cost efficiency of non network expenditure due to a lack of details about the efficiency of the cost, the lack of analysis of options, and no demonstration of their net benefit to users.¹⁶⁰

The Wilson Cook report concludes that three IT related items need to be removed from the capital expenditure because they have not been adequately explained or justified.¹⁶¹ Further to this, the Wilson Cook report could not report on the efficiencies of costings due to currency fluctuations of IT capital expenditure because of a lack of detailed information.¹⁶² In addition, due to a lack of information justifying annual increases to expenditure on motor vehicles from 2010 to 2014, the Wilson Cook report considers the expenditure associated with vehicles in the earlier access arrangement should be maintained over the access arrangement period.¹⁶³

3.4.4 Unit rates

The Wilson Cook report reviews the rates underlying the forecast capital expenditure and considers the rates are within the expected range and in the case of meters, comparable to other gas distribution businesses.¹⁶⁴

3.4.5 Margins and overheads

The Wilson Cook report considers that there is no explanation or justification for the inclusion of the profit margin nor the 6 per cent overhead. The Wilson Cook report

157 Wilson Cook report, pp. 56–57.

158 Wilson Cook report, pp. 57–65.

159 Wilson Cook report, p. 65.

160 Wilson Cook report, pp. 65–70.

161 Wilson Cook report, p. 69.

162 Wilson Cook report, pp. 68–69.

163 Wilson Cook report, p. 69.

164 Wilson Cook report, pp. 56, 60.

recommends removal of the profit margin and that the AER consider also removing the 6 per cent overhead.¹⁶⁵

3.4.6 Capitalisation policy

The Wilson Cook report notes that Jemena has not proposed a capitalisation policy,¹⁶⁶ but for some items Jemena is proposing to capitalise the costs of repairs. The Wilson Cook report considers that the costs or repairs should be expensed and not included as capital expenditure.¹⁶⁷

The Wilson Cook report indicates that it may be appropriate for remedial or repair work to be capitalised if the work creates new assets or if it extends the lives of existing assets.¹⁶⁸

3.4.7 Summary

For both access arrangement periods, the Wilson Cook report is unable to conclude on the efficiency of costs due to a lack of supporting information provided by Jemena.¹⁶⁹

For the earlier access arrangement period, the Wilson Cook report considers the AER should approve the incurred level of expenditure except for the expenditure relating to mines subsidence and the access arrangement.¹⁷⁰

For the access arrangement period, the Wilson Cook report considers the stated levels of expenditure should be accepted as reasonable less adjustments associated with certain projects and an assumed profit margin. The Wilson Cook report further recommends the AER may consider removing the 6 per cent overhead allocation.¹⁷¹

3.5 Submissions

The following section outlines the submissions from interested parties about the capital base.

3.5.1 Energy Markets Reform Forum

The Energy Markets Reform Forum (EMRF) submits issues relating to the application of the NGR and the AER's role, various components of Jemena's capital expenditure program and the costs escalators that Jemena applies to its forecast capital expenditure.

3.5.1.1 Application of the NGR

The EMRF submits that the AER should consider whether the capital expenditure programs are:

165 Wilson Cook report, pp. 69–70.

166 Wilson Cook report, pp. 51, 70.

167 Wilson Cook report, pp. 62–63.

168 Wilson Cook report, pp. 45, 58.

169 Wilson Cook report, pp. 51–52, 70–72.

170 Wilson Cook report, pp. 51–53.

171 Wilson Cook report, p. 72.

- essential (given modest growth in demand which will affect service affordability)¹⁷²
- feasible (within the proposed timeframes with potential resources constraints)¹⁷³
- economically efficient and prudent (given that a prudent and efficient investor might defer investment to a time when costs are lower and that growth in demand indicates no imperative to invest immediately)¹⁷⁴
- consistent with the NGL objective (which requires ‘efficient investment’).¹⁷⁵

EMRF further submits that:

- in the context of capital expenditure programs for the electricity network businesses in NSW, QLD and SA, competition for labour and material resources may result in labour and resource constraints for any capital expenditure planned by Jemena, thereby bringing into question whether the proposed capital expenditure is efficient and prudent¹⁷⁶
- consideration needs to be given to the competing elements of cost and reliability, value for money and the affordability of new gas network tariffs¹⁷⁷
- the NGR encourages over-investment, as the profit of the business is linked to building blocks which include capital expenditure. In this manner capital expenditure is ‘massively inflated,’ despite no growth (effectively) in consumption¹⁷⁸
- there is a good understanding of the needs of the assets (in terms of required capital expenditure) since the first access arrangement was set in 1996, compared with the growth in overall consumption. Historical information provides a very good benchmark for the needs of the network looking forward¹⁷⁹
- Jemena should provide a risk analysis which balances the risks of deferral (i.e. reliability of the system) against the risk of excessive capital costs resulting from unnecessarily early investment at a higher cost¹⁸⁰
- the NGR does not require Jemena to implement any of the capital expenditure programs. This is because Jemena is only required to demonstrate at the next

172 EMRF, *NSW gas distribution revenue reset, Jemena application: A response by the Energy Markets Reform Forum*, 9 November 2009, pp. 8,10, 12 (EMRF, *Submission to the AER*, 9 November 2009).

173 EMRF, *Submission to the AER*, 9 November 2009, pp. 8, 10, 12–13.

174 EMRF, *Submission to the AER*, 9 November 2009, pp. 8–9.

175 EMRF, *Submission to the AER*, 9 November 2009, pp. 10–13.

176 EMRF, *Submission to the AER*, 9 November 2009, pp. 11, 20.

177 EMRF, *Submission to the AER*, 9 November 2009, pp. 6–8.

178 EMRF, *Submission to the AER*, 9 November 2009, pp. 7–8.

179 EMRF, *Submission to the AER*, 9 November 2009, pp. 7–8.

180 EMRF, *Submission to the AER*, 9 November 2009, pp. 11–13.

revision that the capital expenditure either generated more revenue than the cost of the project or that it was required to maintain the effectiveness of the network. For this reason, the capital expenditure programs should be assessed holistically rather than just as a series of individual programs.¹⁸¹

3.5.1.2 Past capital expenditure

In relation to capital expenditure for the earlier access arrangement period the EMRF submits that:

- the AER should consider whether the underspend in the IPART approved capital expenditure for the initial years of the earlier access arrangement period represents gaming by Jemena to receive a significant unearned benefit by delaying capital expenditure¹⁸²
- the PB report undertaken on behalf of Jemena does not address whether the capital expenditure in the earlier access arrangement period was associated with a positive outcome on a net present value (NPV) basis.¹⁸³

3.5.1.3 Forecast capital expenditure

In relation to capital expenditure for the access arrangement period the EMRF submits that:

- Jemena should highlight what projects are allowed for and deferred from the earlier access arrangement period, and what other projects are included to replace those projects not carried out¹⁸⁴
- Jemena should detail the ‘policy changes’ that it uses to support forecast capital expenditure. EMRF notes that there is no basis for a claim for capital expenditure if these are Jemena’s policy changes, but there is a basis for a claim if these are regulatory policy changes¹⁸⁵
- facility upgrades allowing for higher pressure on the trunk should be justified based on whether there is a commercial benefit resulting from increased sales and an NPV benefit to consumers, given there is no overall increase in volume throughput in the system¹⁸⁶
- capital expenditure should be limited by deferring projects that have minimal impact on the reliability of the system.¹⁸⁷

181 EMRF, *Submission to the AER*, 9 November 2009, p. 17.

182 EMRF, *Submission to the AER*, 9 November 2009, p. 19.

183 EMRF, *Submission to the AER*, 9 November 2009, p. 19.

184 EMRF, *Submission to the AER*, 9 November 2009, p. 20.

185 EMRF, *Submission to the AER*, 9 November 2009, p. 20.

186 EMRF, *Submission to the AER*, 9 November 2009, p. 20.

187 EMRF, *Submission to the AER*, 9 November 2009, pp. 11–13.

3.5.1.4 Market expansion

The EMRF submits that a prudent approach to justifying new connections should account for whether the costs of the increasing number of connections are sufficiently offset by the increased revenue from the new connections and whether new customers can afford the network charges associated with increased tariffs.¹⁸⁸

3.5.1.5 Network reinforcement and replacement

The EMRF submits that:

- there is no forecast increase in consumption so there is no need for such a large step increase in capital expenditure¹⁸⁹
- replacement of meters earlier than originally anticipated is inefficient¹⁹⁰
- at face value, the Wakehurst Parkway augmentation appears to be scheduled too early and should be deferred, because demand is forecast to fall¹⁹¹
- the basis of the NPV assessment for the Smithfield Liverpool lining project is not provided so the AER should assess whether the inputs (especially the discount rate) into the NPV analysis are appropriate¹⁹²
- the justification for the Tempe primary receiving station replacement project should identify whether Jemena is building and maintaining these assets to match the lowest practicable cost life cycle. This is to ensure that the assets are not inefficiently replaced earlier than their design life¹⁹³
- claims for mines subsidence should be recouped from the miner and should not be included in the capital base.¹⁹⁴

3.5.1.6 Non-system assets

Concerning the proposed IT capital expenditure, the EMRF submits that, given Jemena observes that the IT program will allow the operating expenditure program to be kept to current levels in real terms, two fundamental issues arise:

- on what basis has the capital expenditure been assessed as prudent and what savings are assumed to provide the required offset in other costs
- rather than being kept at current levels, Jemena's operating expenditure is forecast to increase (the trend has been downwards over the last 10 years) and this apparent inconsistency needs to be clarified.¹⁹⁵

188 EMRF, *Submission to the AER*, 9 November 2009, pp. 20–22.

189 EMRF, *Submission to the AER*, 9 November 2009, p. 23.

190 EMRF, *Submission to the AER*, 9 November 2009, pp. 23–24.

191 EMRF, *Submission to the AER*, 9 November 2009, p. 24.

192 EMRF, *Submission to the AER*, 9 November 2009, p. 24.

193 EMRF, *Submission to the AER*, 9 November 2009, p. 24.

194 EMRF, *Submission to the AER*, 9 November 2009, p. 24.

3.5.1.7 Cost escalators

The EMRF submits:

- Jemena should use actual costs incurred in applying the premiums of inflation (if any) to calculate price increases for wages and materials. The cost estimates for 2009 should not be used as the starting point for the Jemena price increases because the approach to use forecast instead of actual costs is at odds with the principles behind self-benchmarking¹⁹⁶
- the target inflation range set by the Reserve Bank of Australia (RBA) does not provide an accurate method for forecasting inflation rates¹⁹⁷
- the approach taken by the Competition Economics Group (CEG) to developing cost escalators for electricity, gas and water wages and materials, which assumes escalators will increase continuously above the general rate of inflation, is flawed¹⁹⁸
- the CEG's approach of building currency exchange fluctuations into the cost escalators likely takes a conservative approach (due to the high uncertainty associated with such fluctuations). It will increase costs to consumers unnecessarily¹⁹⁹
- capital expenditure forecasts should either be escalated based on general inflation or a unique formula developed for Jemena²⁰⁰
- expected real increases in wages need to be discounted by Jemena's performance in managing real increases in wages²⁰¹
- materials escalators should be based on CPI.²⁰²

3.5.2 Energy Users Association of Australia

The Energy Users Association of Australia (EUAA) submits that:

- a significant increase in revenue of 18 per cent for the access arrangement period is largely attributable to a high increase in forecast capital expenditure of 34.6 per cent. This is of concern to users²⁰³

195 EMRF, *Submission to the AER*, 9 November 2009, p. 26.

196 EMRF, *Submission to the AER*, 9 November 2009, p. 29.

197 EMRF, *Submission to the AER*, 9 November 2009, p. 29.

198 EMRF, *Submission to the AER*, 9 November 2009, pp. 29–30.

199 EMRF, *Submission to the AER*, 9 November 2009, p. 31.

200 EMRF, *Submission to the AER*, 9 November 2009, p. 31.

201 EMRF, *Submission to the AER*, 9 November 2009, p. 34.

202 EMRF, *Submission to the AER*, 9 November 2009, p. 35.

203 Calculated growth rates quoted from EUAA, *Submission to the AER*, 10 November 2009, p. 3.

- the AER should consider benchmarking of capital expenditure, particularly because energy users face a significant information asymmetry and cannot assess efficient investment and management of regulated monopoly businesses²⁰⁴
- the trend in previous access arrangement periods was for Jemena and the previous owner of the pipeline to propose capital expenditure which turned out to be higher than the IPART approved amount and the actual amount incurred. This past trend is indicative of the current Jemena proposal which is likely proposing capital expenditure above what will be approved and incurred over the period. The AER should take this into account²⁰⁵
- there is an apparent anomaly concerning Jemena's calculation of a 1.2 per cent (\$2009–10) underspend for capital expenditure in the earlier access arrangement period. When calculated in \$2004–05, there is an overspend of 3.6 per cent. This may be a mistake on Jemena's behalf or may be due to differences in the forecast rate of inflation used. The AER should determine the actual underspend or overspend²⁰⁶
- the AER should consider whether the forecast customer growth justifies the proposed capital expenditure, particularly in light of the higher capital expenditure per additional customer in the access arrangement period compared with the earlier access arrangement periods.²⁰⁷

3.6 AER's analysis and considerations

3.6.1 Information to support the proposed capital expenditure

The NGR outlines that access arrangement information is information that is reasonably necessary to provide the background to the access arrangement and the basis and derivation of components of the access arrangement.²⁰⁸ The access arrangement information is to assist users and prospective users in understanding the access arrangement.

The AER considers that while Jemena provides some of the information to support its proposed capital expenditure programme, it relies heavily on reports which are appended to the access arrangement information. Some of those reports were made public while others remain confidential. Much of the information about capital expenditure does not provide sufficient details for users and prospective users about the key network projects to be undertaken and their cost. It is also unclear to users how the forecast capital expenditure determined on a programme basis (market expansion, system reinforcement and non-system assets) reconciles to the specific capital expenditure projects for the network and IT.

204 EUAA, *Submission to the AER on Jemena Gas Networks' Access Arrangement proposal 2010/11–2014/15*, 10 November 2009, p. 4 (EUAA, *Submission to the AER*, 10 November 2009).

205 EUAA, *Submission to the AER*, 10 November 2009, p. 14.

206 EUAA, *Submission to the AER*, 10 November 2009, pp. 14–15.

207 EUAA, *Submission to the AER*, 10 November 2009, pp. 15–16.

208 NGR, r. 42.

Further, the AER considers that Jemena's access arrangement information contains some broad statements that its forecast capital expenditure conforms with the new capital expenditure criteria set out in r. 79 of the NGR. However, there is no reconciliation to the proposed capital expenditure forecasts, the components of the programmes and the justification provided for these programmes under the NGR as outlined in the forecast methods.

To support its forecast capital expenditure Jemena primarily relies on two consultants' reports, the PB report for all capital expenditure apart from IT and the KPMG report for IT capital expenditure. The AER considers that while these reports provide high level benchmarking analysis, they are highly qualified and do not provide support for Jemena's proposal that its capital expenditure is based on efficient cost estimates.

The AER considers Jemena's access arrangement information may not provide a level of detail and coherency to enable users to understand either the background or the basis for the capital expenditure proposal.

3.6.2 Opening capital base

3.6.2.1 Capital expenditure

The AER is required to undertake an assessment of the capital expenditure in the earlier access arrangement period that Jemena proposes to add to the opening capital base.²⁰⁹

Clause 3(2) of schedule 1 of the NGR provides that if the IPART agreed under s. 8.21 of the Code that actual or forecast new facilities investment²¹⁰ in the earlier access arrangement met the requirements of s. 8.16(a) of the Code the AER will be bound by that agreement. The AER is not aware of any such agreement and Jemena has not submitted that clause 3(2) of schedule 1 of the NGR applies to its access arrangement proposal. Accordingly, the AER considers Jemena's proposed capital expenditure in the earlier access arrangement period under r. 79 of the NGR.

Jemena proposes that total capital expenditure of \$556.6 million (\$2009–10) be added to the opening capital base.²¹¹ This amount is similar to what was approved by the IPART for the earlier access arrangement period.²¹² As shown in Figure 3.1 the actual capital expenditure in the first year of the period is lower than forecast, whereas in the final year capital expenditure is expected to be higher than the forecast approved by the IPART.²¹³

209 NGR, r. 77.

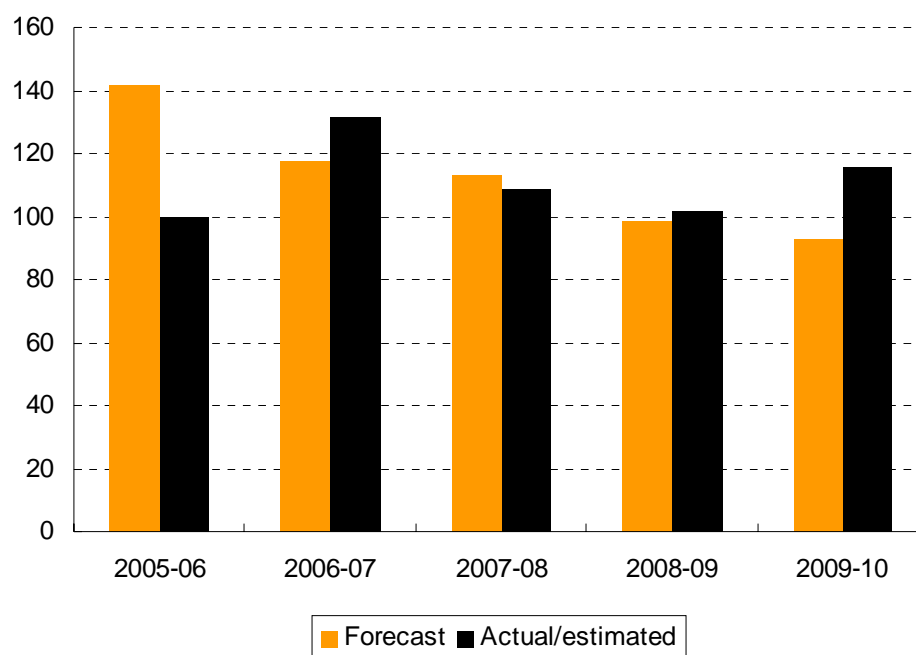
210 The Code used the term 'new facilities investment', whereas the NGR refers to 'capital expenditure'.

211 Jemena, *Access arrangement information*, August 2009, p. 47.

212 IPART, *Final Decision: Revised access arrangement for AGL gas network*, April 2005, p. 88.

213 Jemena, *Access arrangement information*, August 2009, p. 49.

Figure 3.1: Comparison of forecast and actual/estimated capital expenditure 2005–2010 (\$m, real, 2009–2010)



Source: Jemena, *Access arrangement information*, August 2009, p. 49.

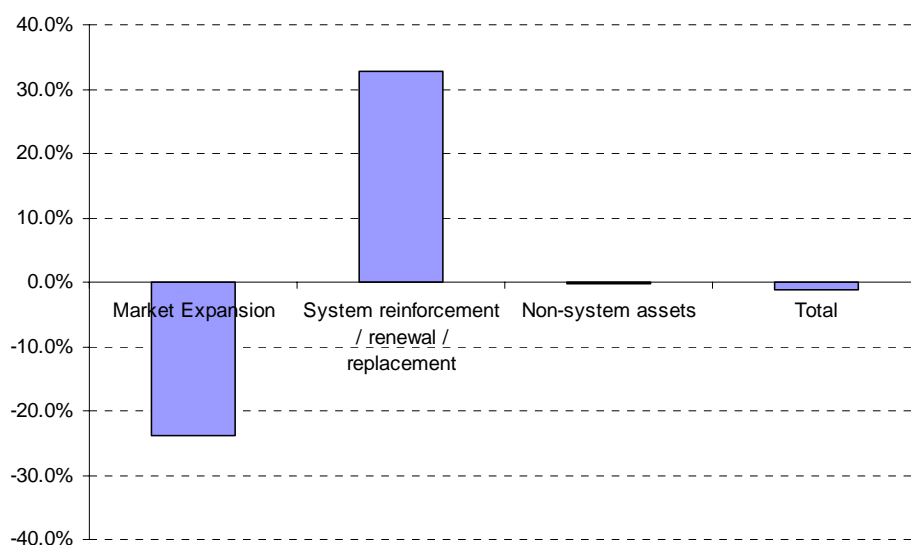
As outlined, Jemena’s capital expenditure for the earlier access arrangement period is split into three broad categories: market expansion, system reinforcement, renewal and replacement, and non-system assets.

As shown in Figure 3.2, market expansion capital expenditure is 24 per cent or \$74.0 million (\$2009–10) less than the capital expenditure approved by the IPART. System reinforcement, renewal and replacement capital expenditure exceeds that approved by the IPART by 33 per cent.²¹⁴ This difference is equal to \$67.4 million (\$2009–10). The non-system assets capital expenditure in the earlier access arrangement period was not significantly different to that approved by the IPART.²¹⁵

214 Jemena, *Access arrangement information*, August 2009, p. 49.

215 Jemena, *Access arrangement information*, August 2009, pp. 49–50.

Figure 3.2: Differences between actual/estimated and forecast capital expenditure (\$m, real, 2009–10)



Source: Jemena, *Access arrangement information*, August 2009, p. 49.

The trends shown in Figure 3.1 and Figure 3.2 are discussed below for each of the main components of Jemena’s approved and actual capital expenditure in the earlier access arrangement period.

Market expansion

Jemena submits that its market expansion capital expenditure, which was lower than that approved by the IPART, is consistent with a lower number of new connections than forecast.²¹⁶ The AER notes that the actual number of new connections was lower than approved by the IPART.

Several factors may have contributed to the lower number of new connections than approved by the IPART. New gas connections are generally associated with the growth in new residential developments. However, the rate of new gas connections may have been affected by an increase in demand for reverse cycle air conditioners that meet both cooling and heating requirements of households.²¹⁷ Although the trend in using gas for water heating is stable, new houses are trending towards ‘green’ energy options such as solar and heat pumps rather than gas, further contributing to the reduction in new gas connections.²¹⁸ Although these were factored into the demand forecasts in the earlier access arrangement period, the combined effects of these trends may have been underestimated in the original forecasts.

Jemena submits that its market expansion capital expansion expenditure is consistent with r. 79(2)(b) of the NGR.²¹⁹ This states that capital expenditure is justified if the present value of the expected incremental revenue exceeds the present value of the

216 Jemena, *Access arrangement information*, August 2009, p. 50.

217 Jemena, *Access arrangement information*, August 2009, appendix 5.1, p. 5.

218 Jemena, *Access arrangement information*, August 2009, appendix 5.1, p. 7.

219 Jemena, *Access arrangement information*, August 2009, p. 113.

capital expenditure. If the NPV of the capital expenditure exceeds the NPV of incremental revenue, Jemena seeks a capital contribution (which is excluded from the capital base) from the relevant user to make up the difference. As a result Jemena submits that its market expansion capital is consistent with r. 79(2) of the NGR.²²⁰

The PB report, which Jemena relies on to justify its capital expenditure in the earlier access arrangement period, considers that although the unit cost of market expansion capital expenditure was higher than forecast despite efficiency improvement, the market expansion work undertaken in the earlier access arrangement period was efficient.²²¹ This conclusion is based on a number of qualitative considerations. Increased competition between meter suppliers and common trenching lowered mains installation costs. This was offset by higher than forecast construction costs due to more stringent requirements under the OH&S Act, increased council fees for restoration and increased labour costs.²²²

The Wilson Cook report notes that the unit rate per new connection over the earlier access arrangement was \$1836 (\$2009–10), which is 22 per cent higher than the implied unit rate of \$1502 (2009–10) approved by the IPART.²²³

The Wilson Cook report concludes that the market expansion capital expenditure is reasonable in scope.²²⁴ However, the Wilson report is not able to attest to the cost efficiency of the capital expenditure because the factors that Jemena submitted led to the higher unit rates were not quantified. The Wilson Cook report notes that detailed cost information should demonstrate the variance in the cost of new connections in different circumstances and disclose the amount of any capitalised overheads or profit margins arising from outsourcing arrangements to related parties.²²⁵ Despite these limitations in Jemena's access arrangement proposal, the Wilson Cook report recommends that the AER approves Jemena's capital expenditure of \$234.8 million (\$2009–10) for market expansion in the earlier access arrangement period.²²⁶

The AER considers that market expansion capital expenditure is necessary to cater for new connections to Jemena's gas network and that the expenditure was necessary for Jemena to maintain its capacity to meet levels of demand for services at the time the expenditure was incurred.²²⁷ The AER notes that Jemena submits that actual capital expenditure for market expansion in the earlier access arrangement period was less in aggregate than that approved by the IPART.²²⁸ Market expansion capital expenditure was lower than forecast because of a lower number of new connections despite higher unit rates (increasing the costs for each new connection). The Wilson Cook report

220 Jemena, *Access arrangement information*, August 2009, p. 113.

221 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 50.

222 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 49–50.

223 Wilson Cook report, p. 42.

224 Wilson Cook report, p. 42.

225 Wilson Cook report, p. 42.

226 Wilson Cook report, p. 53.

227 NGR, r. 79(2)(c)(iv).

228 Jemena, *Access arrangement information*, August 2009, p. 49.

notes that gas (and electricity) distribution businesses have experienced higher costs in the last seven years or so for the reasons put forward by Jemena.²²⁹

In light of this, the AER considers that the reasons put forward by Jemena for actual unit rates being higher than those approved by the IPART are reasonable and support a higher unit cost of \$1836 (\$2009–10) per connection.

System reinforcement, renewal and replacement capital expenditure

During the earlier access arrangement period, significant changes in scope and increases in the costs of capital works occurred, compared with the projects approved by the IPART.²³⁰ Some of these projects include:

- the SPL
- mines subsidence mitigation projects
- replacement and renewal of aging high pressure facilities
- an upgrade of high pressure facilities due to a pressure upgrade to the MSP.²³¹

As part of its assessment of whether Jemena's access arrangement complies with r. 79 of the NGR, the AER examines projects that were approved by the IPART but exceed the amount approved by the IPART (variations) and projects undertaken by Jemena but not approved by the IPART (unplanned projects). The following outlines the AER's analysis of these capital expenditure items.

Sydney Primary Loop Project

The actual amount incurred by Jemena was \$34.4 million (\$nominal) over the IPART approved amount. Jemena submits that the variation to the cost estimate was due to limited information available at the time the cost was estimated and approved.²³²

Jemena submits that the basis of the increase was due to changes to project scope, route alignment, design requirements and cost of materials and labour.²³³

The Wilson Cook report considers that the SPL project is reasonable in terms of scope.²³⁴

The AER notes Jemena's submission that at the time the proposal was put to the IPART in December 2003 it was based on a desktop estimate only with limited field information. It was only after completion of detailed design, engineering and planning activities that additional scope and costs were identified.²³⁵ In view of this the AER accepts that the cost of the SPL project may be significantly different than that approved by the IPART.

229 Wilson Cook report, p. 42.

230 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 18–27.

231 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 18–27.

232 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 20.

233 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 24.

234 Wilson Cook report, pp. 44–45.

235 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 22–24.

The AER notes that the SPL was part of Jemena's risk mitigation strategy in order for Jemena to maintain its capacity to meet demand in the event of loss of supply to the Sydney Primary Main.²³⁶ The AER considers that the capital expenditure was necessary to maintain the integrity of services.²³⁷

Mines subsidence works

Jemena submits \$17.8 million (\$2007–08) was spent on mines subsidence in excess of the amount approved by the IPART in the earlier access arrangement period.²³⁸ The Wilson Cook report considers that the work was necessary, but recommends that this amount should not be added to the capital base.²³⁹ The AER agrees with the conclusions in the Wilson Cook report that the costs of repairs to pipelines damaged by mines subsidence are expenses, not capital expenditure. As outlined in the Wilson Cook report this is because the nature of this expenditure does not either create an asset or extend the life of an existing asset to justify that the amount of expenditure can be added to the capital base.²⁴⁰

The AER considers that Jemena's capital expenditure is not conforming capital expenditure under r. 79(1) of the NGR as the expenditure is not of a capital nature incurred to provide, or in providing, pipeline services.²⁴¹

Jemena submits that only \$17 million (\$ nominal) is directly attributable to Jemena and the rest is spent by JAM on other customers.²⁴² Jemena further submits that **c-i-c** was recovered by capital contributions and removed from the asset base.²⁴³

The AER estimates the additional proposed amount for mines subsidence work to be **c-i-c** (\$2004–05) and the associated capital contributions to be **c-i-c** (\$2004–05), which Jemena submits it has deducted from the proposed capital base.²⁴⁴

The AER requires Jemena to remove these amounts from the opening capital base so that the net effect of removing mines subsidence is to reduce the capital base by \$4.6 million (\$2004–05).²⁴⁵ The AER notes that Jemena was not provided with operating expenditure in the earlier access arrangement period for mine subsidence. However, the \$4.6 million (\$2004–05) spent on mine subsidence is offset by the amount Jemena underspent for operating expenditure totalling \$50.2 million (\$2009–10) in the earlier access arrangement period.²⁴⁶

Facilities' renewal and upgrades

236 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 23.

237 NGR, r. 79(2)(c)(ii).

238 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 18–20.

239 Wilson Cook report, p. 45.

240 Wilson Cook report, p. 45.

241 NGR, r. 69.

242 Jemena, email response to the AER, 22 January 2010, attachment 1, pp. 2–3.

243 Jemena, email response to the AER, 22 January 2010, attachment 1, pp. 2–3.

244 Jemena, email response to the AER, 22 January 2010, attachment 1, p. 2.

245 Please note this number has been rounded to 1 decimal place.

246 Jemena, *Access arrangement information*, August 2009, p. 47. Note this number is derived from the difference between allowed and incurred total non-capital costs in Table 4.7.

Jemena submits \$17.4 million (\$2007–08) was spent on renewal and upgrades of facilities in excess of the amount approved by the IPART in the earlier access arrangement period. Jemena submits this was due to significant scope changes identified as a result of subsequent detailed planning.²⁴⁷ Jemena further submits that the higher expenditure was a result of the replacement and renewal of aging high pressure facilities and an upgrade of high pressure facilities required by a pressure upgrade to the MSP.²⁴⁸

On an examination of eight projects in this category and detailed information on the replacement of district regulator sets, the Wilson Cook report concludes that the expenditure is reasonable in terms of scope and timing.²⁴⁹

On this basis the AER considers the facilities' renewal and upgrades to be necessary to maintain the integrity of services²⁵⁰ and the higher capital expenditure reasonable in the context of higher unit rates incurred by Jemena in the earlier access arrangement period than approved by the IPART.

Mains and service renewals

Jemena submits \$0.8 million (\$2007–08) was spent on mains and services renewals in excess of the amount the IPART approved for the earlier access arrangement period. Jemena submits this was predominantly due to greater than forecast number of ad hoc rehabilitation and renewals projects and that the rehabilitation of some networks had not been allowed for in the forecasts provided to the IPART. The need for these works was identified on the basis of performance issues or customer complaints.²⁵¹

The Wilson Cook report examines five projects relating to this work from the list of overruns provided by Jemena and is satisfied that the expenditure arose through assessments of network condition and is reasonable in terms of scope.²⁵² The AER further considers that the capital expenditure was necessary to maintain the integrity of services.²⁵³

Capacity development

The Wilson Cook report notes that expenditure on capacity development amounts to \$30.8 million (\$2009–10), 27 per cent less than approved by the IPART. This expenditure is related to growth and was lower than forecast as a result of demand being lower than forecast.²⁵⁴

The AER considers the scope of work undertaken is justified in light of lower demand and the higher capital expenditure (per unit) is reasonable in the context of higher unit rates incurred by Jemena in the earlier access arrangement period than approved by the IPART.

247 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 19–20.

248 Jemena, *Access arrangement information*, August 2009, p. 50.

249 Wilson Cook report, p. 46.

250 NGR, r. 79(2)(c)(ii).

251 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 19–20.

252 Wilson Cook report, p. 45.

253 NGR, r. 79(2)(c)(ii).

254 Wilson Cook report, p. 43.

Conclusion on system reinforcement, renewal and replacement capital expenditure

The AER notes that capital expenditure in this category for the earlier access arrangement period of \$272.5 million (\$2009–10) is 33 per cent higher than the \$205.1 million (\$2009–10) approved by the IPART.²⁵⁵ The higher capital expenditure was incurred largely as a result of the interaction of the changes in scope of certain projects and higher unit rates than those approved by the IPART in the earlier access arrangement period. The Wilson Cook report considers that the scope of this capital expenditure is reasonable. However, the Wilson Cook report is unable to come to a definite conclusion regarding the cost efficiency of the expenditure because of a lack of information.²⁵⁶ Nevertheless, with the exception of expenditure on mines subsidence the Wilson Cook report recommends the AER approves Jemena's capital expenditure for the earlier access arrangement period.²⁵⁷

The AER has assessed Jemena's reinforcement, renewal and replacement capital expenditure in the earlier access arrangement. The AER agrees with the Wilson Cook report that the projects undertaken were necessary to maintain the integrity of services.²⁵⁸ Further, the higher capital expenditure is reasonable in the context of higher unit rates incurred by Jemena in the earlier access arrangement period than approved by the IPART.

Non-system assets

Jemena's capital expenditure on non-system assets (IT systems and software, motor vehicles and plant and equipment which are not part of the network) is generally in line with the amount approved by the IPART.²⁵⁹ However, there are some timing differences with forecast capital expenditure in the first two years deferred until the last three years. For some items the capital expenditure is less than that approved by the IPART.²⁶⁰ This is offset by higher capital expenditure for other items.²⁶¹

Much of the non-system assets capital expenditure approved by the IPART (approximately 58 per cent) is attributable to the modernising of the IT infrastructure platform and efficiency changes made to core software applications.²⁶²

The AER notes the Wilson Cook report outlines that there is a difference in the cost of the IT work approved by the IPART and that undertaken by Jemena. The Wilson Cook report assesses the capital expenditure and considers that it may have been reasonable, but it is unable to verify or attest to its cost efficiency.²⁶³

255 Jemena, *Access arrangement information*, August 2009, p. 49.

256 Wilson Cook report, pp. 43–46.

257 Wilson Cook report, p. 53.

258 NGR, r. 79(2)(c)(ii).

259 Jemena, *Access arrangement information*, August 2009, p. 49.

260 Jemena, *Access arrangement information*, August 2009, p. 49.

261 Jemena, *Access arrangement information*, August 2009, p. 49.

262 Jemena, *Access arrangement information*, August 2009, appendix 7.2, p. 25.

263 Wilson Cook report, p. 50.

In relation to motor vehicles and plant and equipment, the Wilson Cook report notes that even though the actual expenditure is less than that approved by the IPART, it considers that the capital expenditure is reasonable.²⁶⁴

In relation to land, buildings and leasehold assets, the Wilson Cook report notes that no expenditure was approved by the IPART. However, Jemena spent \$7.3 million (\$2009–10) to consolidate its depot, site offices and control centre. The Wilson Cook report states that there is insufficient information to assess this item.²⁶⁵

The Wilson Cook report notes that Jemena includes capital expenditure on matters relating to the preparation of the access arrangement proposal. The Wilson Cook report queries if this expenditure should be capitalised.²⁶⁶

The AER notes that this expenditure of \$3.5 million (\$2009–10) was approved by the IPART as 'deferred software' as part of Jemena's IT program. On the basis that this amount relates to software and is capital expenditure to create an asset, the AER accepts this as capital expenditure.²⁶⁷ The AER acknowledges the Wilson Cook report concerning the lack of information to adequately identify the nature of capital expenditure in relation to non-system assets. Nevertheless, the AER notes that in aggregate Jemena's actual capital expenditure is in line with that approved by the IPART. Changes in scope of certain projects has meant that capital expenditure in some items was less than that approved by the IPART and higher for other items. In light of this the AER considers that Jemena's IT capital expenditure in the earlier access arrangement period is justifiable to maintain the integrity of services.²⁶⁸

Conclusion on capital expenditure for the earlier access arrangement period

The AER notes that in aggregate actual capital expenditure in the earlier access arrangement is broadly in line with that approved by the IPART. Market expansion capital expenditure was lower than forecast as a result of new connections being lower than forecast, despite increases in unit rates.²⁶⁹ This was offset by higher expenditure on system reinforcement, renewal and replacement capital expenditure as a result of higher unit rates than forecast and change in scope of certain projects, notably the SPL project.²⁷⁰

The AER does not consider that Jemena's proposed capital expenditure for the earlier access arrangement period would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.²⁷¹

264 Wilson Cook report, p. 51.

265 Wilson Cook report, p. 51.

266 Wilson Cook report, p. 51.

267 NGR, r. 79.

268 NGR, r. 79(2)(c)(iv).

269 Wilson Cook report, p. 41.

270 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 21–25.

271 NGR, r. 79(1)(a).

After accounting for CPI and amending the way Jemena calculates the final capital expenditure in 2009–10 dollars and removing the proposed capital expenditure on mines subsidence, the AER reduces the capital expenditure in the earlier access arrangement period from \$556.6 million to \$521.9 million (\$2009–10). Overall, the AER considers that capital expenditure of \$521.9 million (\$2009–10) in the earlier access arrangement period is that which would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.²⁷² The AER also considers that the capital expenditure is justifiable on the grounds set out in r. 79(2) of the NGR.

3.6.2.2 Depreciation

There are two considerations relevant for depreciation in the earlier access arrangement period:

- any adjustments for differences between actual and forecast capital expenditure before the earlier access arrangement period²⁷³
- adjustments to the capital base for depreciation in the earlier access arrangement period.²⁷⁴

Adjustments for capital expenditure before the earlier access arrangement period

Jemena submits that the value of the opening capital base is the same as that determined in the IPART final decision as at 30 June 2005. Jemena notes that only the capital expenditure for the period to 30 June 2005 approved by the IPART constitutes conforming capital expenditure.²⁷⁵ Jemena submits that no adjustment is required for the difference between estimated and actual capital expenditure in the opening capital base at the commencement of the earlier access arrangement period.²⁷⁶ In this case, the AER considers that no adjustment is necessary.²⁷⁷

Depreciation in the earlier access arrangement period

In establishing the opening capital base for the purposes of r. 77(2)(d) of the NGR, Jemena proposes to use forecast depreciation over the earlier access arrangement period.²⁷⁸ Rule 77(2)(d) of the NGR requires depreciation over the earlier access arrangement period to be estimated in accordance with any relevant provisions of the access arrangement governing the calculation of depreciation for the purposes of establishing the opening capital base. Clause 4.1 of Jemena's earlier access arrangement provides that forecast depreciation will be used in calculating the opening capital base.²⁷⁹

272 NGR, r. 79(1)(a).

273 NGR, r. 77(2)(a).

274 NGR, r. 77(2)(d).

275 Code, s. 8.16 of the Code.

276 Jemena, *Access arrangement information*, August 2009, pp. 123–124.

277 NGR, r. 77(2)(a).

278 Jemena, *Access arrangement information*, August 2009, p. 125.

279 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, p. 63.

However, the depreciation values as shown in Table 3.5 are inconsistent with the forecast depreciation approved by the IPART for the earlier access arrangement period.²⁸⁰ The AER considers that Jemena has incorrectly inflated both the capital base and depreciation values. The AER considers that the correct approach is to deflate the depreciation approved by the IPART by the forecast inflation rates approved by the IPART and then adjust the depreciation by the actual inflation rates for 2005–06 to 2008–09 and forecast inflation for 2009–10. The depreciation calculated by the AER for the earlier access arrangement period is shown in Table 3.5. The AER requires Jemena to make the amendment 3.2 set out below.

Table 3.5: Depreciation for the earlier access arrangement (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10	Total
Jemena’s proposal	103.2	93.7	126.2	99.2	84.6	506.9
Depreciation	67.4	73.9	80.5	83.6	78.5	383.8

Source: Jemena, *Access arrangement information*, August 2009, p. 125, and AER analysis.

3.6.2.3 Adjustment to the capital base for inflation

The EUAA queries Jemena’s submission that capital expenditure in the earlier access arrangement is less than forecast. EMRF submits that capital expenditure is higher than forecast (in \$2004–05). EMRF questions whether it is an error on the part of Jemena, or a result of differences in inflation rates used by Jemena and the EUAA.²⁸¹ The AER confirms that the apparent anomaly can be attributed to the use of forecast inflation rates in setting forecast capital expenditure and the use of actual inflation rates by Jemena in making its comparison.

Jemena proposes that the adjustment to the capital base for inflation be estimated by applying the year-on-year change in the CPI for the June quarter.²⁸²

The AER does not consider this method to be appropriate as it is inconsistent with the method used by Jemena in its tariff variation mechanism in the earlier access arrangement period. The AER considers that the method used by Jemena in its tariff variation mechanism in the earlier access arrangement period should be applied to adjust the capital base for inflation. This method applies the change in the CPI between December of one year and December of the previous year. For example, for 2008–09, this method would apply the change in average CPI between December 2008 and December 2007.

For the purposes of the draft decision, this method requires the use of forecast CPI for the December quarter of 2009. The AER considers that, consistent with the approach used to calculate the inflation rate for the WACC, the RBA forecast for the December quarter of 2009 should be used to forecast the CPI for the last quarter of 2009.²⁸³ The

280 IPART, *Final Decision, Revised access arrangement for AGL Networks*, April 2005, p. 88.

281 EUAA, *Submission to the AER*, 10 November 2009, pp. 14–15.

282 Jemena, *Access arrangement information*, August 2009, pp. 124–125.

283 RBA, *Statement on Monetary Policy*, 7 August 2009, p. 75.

AER notes that for the final decision actual CPI data will be available for the last two quarters of 2009 and so the rate of inflation for 2009–10 in the final decision is likely to change.

The AER considers that the inflation rates shown in Table 3.6 have been arrived at on a reasonable basis and represent the best estimates or forecasts possible in the circumstances.²⁸⁴ The AER requires Jemena to make amendment 3.1.

Table 3.6: Inflation rates for adjusting the capital base (%)

	2005–06	2006–07	2007–08	2008–09	2009–10
Inflation rates	2.80	3.25	2.96	3.69	1.50

Source: Australian Bureau of Statistics, *6401–Consumer price index*, Australia, June 2009 and RBA, *Statement on Monetary Policy*, 7 August 2009, p. 75.

3.6.2.4 Re-use of redundant assets

In the 2005 final decision, the IPART identified redundant capital on the Wilton to Wollongong pipeline.²⁸⁵ The IPART required the removal of 20 per cent of the value of that pipeline from the capital base at the commencement of the earlier access arrangement period.²⁸⁶ The IPART observed a decrease in sales volume due to the commencement of operation of the EGP, which bypasses this part of the network.²⁸⁷ The IPART noted that the removal of the redundant capital would have a minor impact on total revenue and would result in a reduction in tariffs for users of the Wilton to Wollongong pipeline.²⁸⁸

Jemena submits that circumstances have changed since the IPART decision and, with the introduction of the Short Term Trading Market (STTM), Jemena will not be able to manage capacity utilisation on its trunks. Jemena further submits that there is little reason to presume that the Wilton to Wollongong pipeline will continue to be underutilised under the STTM.²⁸⁹

The AER considers that Jemena’s access arrangement proposal does not contain evidence that demand on the redundant asset has increased during the earlier access arrangement period. In addition, Jemena’s demand forecasts for the access arrangement period do not support an increase in usage of this pipeline in the access arrangement period.

For the purposes of r. 86(1) of the NGR, Jemena does not demonstrate that this redundant asset contributes to the delivery of pipeline services. If the redundant asset contributes to the delivery of pipeline services following the introduction of the STTM, the asset may be rolled into the capital base at the commencement of the next access arrangement period, subject to r. 79 of the NGR.

284 NGR, r. 74(2).

285 IPART, *Final Decision: Revised access arrangement for AGL gas network*, April 2005, pp. 80–86.

286 IPART, *Final Decision: Revised access arrangement for AGL gas network*, April 2005, pp. 80–86.

287 IPART, *Final Decision: Revised access arrangement for AGL gas network*, April 2005, pp. 81–82.

288 IPART, *Final Decision: Revised access arrangement for AGL gas network*, April 2005, p. 86.

289 Jemena, *Access arrangement information*, August 2009, p. 128.

Jemena must therefore remove this item from the proposed opening capital base and is required to amend its access arrangement as outlined in amendment 3.2.

3.6.2.5 Summary on the opening capital base

The AER has considered the components of Jemena's proposed opening capital base. The AER requires an amendment to the opening capital base to account for amendments to capital expenditure and depreciation in the earlier access arrangement period, the removal of the redundant asset and an amendment to Jemena's proposed adjustment to the capital base for inflation. As a result, the AER does not consider that Jemena's proposed opening capital base is consistent with r. 77(2) of the NGR. Jemena is required to amend its access arrangement information as outlined in amendments 3.1 and 3.2.

3.6.3 Projected capital base

3.6.3.1 Forecast capital expenditure

Introduction

Jemena's proposed capital expenditure of \$885.2 million (\$2009–10) for the access arrangement period is significantly higher than the capital expenditure of \$556.6 million (\$2009–10) incurred in the earlier access arrangement period.

The PB report, which Jemena relies on to support its forecast capital expenditure, considers that the proposed capital expenditure for the access arrangement period for the projects it reviewed is conforming capital expenditure, and complies with r. 79 of the NGR.²⁹⁰ The PB report considers that the drivers for increases in capital expenditure are reasonable and in line with Jemena's asset management plan. The PB report further considers that Jemena's governance processes enable projects to be developed in compliance with r. 74 and r. 79 of the NGR.²⁹¹

The PB report qualifies its conclusions by stating that provided component projects and unit rates included in the expenditure forecasts comply with Jemena's governance processes, then on this basis the proposed increase in forecast capital expenditure is reasonable and reflects that of a prudent and efficient operator.²⁹²

As outlined, the Wilson Cook report considers the scope of works for the projected capital expenditure programme seems reasonable, but that due to the lack of information and the nature of assurance provided by PB, the Wilson Cook report cannot conclude that the costs underlying these programmes are efficient.²⁹³

Given these conclusions, from both Jemena's²⁹⁴ and the AER's consultants,²⁹⁵ the AER cannot conclude that Jemena's proposed capital expenditure meets the

290 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. vi.

291 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. vi.

292 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. vi.

293 Wilson Cook report, pp. 51, 70–72.

294 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. vi.

295 Wilson Cook report, pp. 51, 70–72.

requirements of the NGR. In assessing Jemena's proposed capital expenditure for compliance with r. 79 of the NGR, the AER takes an approach to approving a level of capital expenditure that strikes a balance between what capital projects Jemena reasonably requires for the access arrangement period, and what capital expenditure projects Jemena has delivered historically and so demonstrates can be delivered in the access arrangement period in compliance with r. 79 of the NGR. Therefore:

- for certain capital expenditure items a baseline level of capital expenditure is derived from the average annual actual capital expenditure in the earlier access arrangement period. The scope of this capital expenditure for the access arrangement period is assessed as reasonable on the basis that Jemena has demonstrated it has delivered similar programmes in the earlier access arrangement period, but for a lower base cost
- as the cost of the proposed capital expenditure cannot be attested to in terms of efficiency, the AER applies a cost benchmark derived from the historical costs incurred in the earlier access arrangement period. This ensures that the costs of works undertaken in the access arrangement period are at least as efficient as works undertaken of a similar nature in the earlier access arrangement period
- certain individual projects are included that have sufficient information, and for which historical levels of capital expenditure are not indicative, whereby the AER can conclude that these projects meet the criteria set out in the NGR. In these cases, the AER removes the flat 6 per cent overhead allocation and the JAM margin (for reasons discussed below)²⁹⁶
- certain items of capital expenditure are removed (for example, because the AER considers that they are operating expenditure in nature).

Key components of Jemena's proposed capital expenditure are discussed below in relation to the AER's approach.

Asset Management Agreement

Prior to examination of specific capital expenditure projects this section discusses the AER's consideration of the Asset Management Agreement (AMA) relevant to Jemena's proposed capital expenditure. There are two aspects of the AMA that are relevant for consideration for the projected capital base. These aspects are discussed below.

Margins

Jemena outsources its asset planning activities, network operating and maintenance activities, capital program delivery and certain other functions to JAM.²⁹⁷ The terms and conditions of this outsourcing arrangement are set out in the AMA, including the fees for services provided by JAM, which are based on a cost plus flat percentage margin.

296 NGR, r. 79.

297 Jemena, *Access arrangement information*, August 2009, p. 29 (confidential).

The AER's consideration of Jemena's proposed margins and its general approach to these types of related party arrangements is contained in detail in chapter 9 of the draft decision.

Key among these issues discussed in chapter 9 of the draft decision is that Jemena needs to be able to demonstrate that the cost and margin that it is charged from JAM can be demonstrated to be the lowest sustainable cost. As outlined in the Wilson Cook report, Jemena has not demonstrated that this is the case.²⁹⁸

The AER considers that inclusion of the JAM margin would result in capital expenditure which would not be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.²⁹⁹ The AER notes that capital expenditure considered under the baseline approach assumes no explicit margin applies (however it notes that an implicit margin may be present).

Overheads

A flat 6 per cent of capital expenditure is included in the capital expenditure forecasts to account for overheads.³⁰⁰ The AER understands that the overhead includes amounts for corporate head office costs which are charged to JAM under the whole of business cost allocation (WOBCA) methodology as outlined in chapter 9 of the draft decision as well as (overhead) costs incurred internally by JAM associated with the proposed capital expenditure.³⁰¹

The Wilson Cook report outlines that overheads may be appropriate in circumstances where the overhead is not already included in operating expenditure and can be justified and reconciled. The Wilson Cook report recommends that the AER may remove the overhead as it cannot reconcile the 6 per cent overhead level from the information provided.³⁰²

Even though the AER sought confirmation of how the overhead costs were derived from Jemena,³⁰³ the AER was unable to reconcile the proposed level of overhead costs to be included in the proposed capital expenditure with costs allocated under the WOBCA methodology or incurred directly by JAM. Further, as Jemena submits most of the proposed capital expenditure is outsourced by JAM.³⁰⁴ As this is the case, the AER considers only that part of the capital expenditure program that JAM undertakes directly should attract an overhead cost. This is because the costs for the part of the capital programme outsourced by JAM to other parties would already include an amount for the other parties' overheads. In this way, including overheads on top of outsourced costs would amount to double counting of overheads for the outsourced part of the capital programme. That said, without the benefit of a bottom-up

298 Wilson Cook report, pp. 70–72.

299 NGR, r. 79(1)(a).

300 Jemena, *Access arrangement information*, August 2009, appendix 7.5, pp. 15–16.

301 Jemena, *Access arrangement information*, August 2009, appendix 3.1 (confidential).

302 Wilson Cook report, pp. 69, 72.

303 Jemena, Response to AER 11 December 2009 Questions, 18 December 2009 (confidential).

304 Jemena, Response to AER 2 December 2009 Questions–Tranche 2, 11 December 2009 (confidential).

reconciliation of the proposed overhead costs, the AER has not been able to determine whether these overhead costs are already included in the operating and maintenance costs charged under the JAM contract. For this reason, the AER was not able to confirm that the forecast capital expenditure including the overhead relevant to JAM's delivery of the capital programme is an amount incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.³⁰⁵ While the AER has been provided with information about the proportion of the overall capital expenditure program that is outsourced, the AER has not been able to discern what the proportion is for specific projects. The AER also has not been provided with sufficient information about the cost base for overheads relevant to JAMs delivery of the capital expenditure program. This is important to determine whether the flat percentage for overheads is appropriate. As a consequence of this absence of information, the AER has removed the flat 6 per cent margin for overheads.

Therefore, the AER has removed the flat 6 per cent overhead allocation from forecast capital expenditure, where relevant to the approach as outlined above. However, as outlined below this approach is not relevant to the AER's consideration of those categories of capital expenditure where the AER has used actual capital expenditure in the earlier access arrangement period as the basis for forecasting capital expenditure in the access arrangement period.

Market expansion capital expenditure

Market expansion capital expenditure is undertaken to meet growth in customer numbers and new connections and relates to areas of new development. Jemena submits that market expansion capital expenditure forecasts are informed by forecast volumes of new connections and unit rates.³⁰⁶ Annual volumes of new connections for all market trends are based on NIEIR forecasts which follow historical trends.³⁰⁷ Forecast unit rates are based on historical actual rates from the earlier access arrangement period and the forecast 2009–10 unit rates.³⁰⁸

Jemena's proposed total capital expenditure for market expansion of \$371 million (\$2009–10) is 58 per cent higher than the \$234.8 million (\$2009–10) incurred in the earlier access arrangement period.³⁰⁹

Jemena submits that its proposed market expansion capital expenditure is justified under r. 79(2)(b) of the NGR.³¹⁰ This states that capital expenditure is justified if the present value of the expected incremental revenue exceeds the present value of the capital expenditure. In cases where the NPV of the capital expenditure exceeds the NPV of incremental revenue Jemena will seek a capital contribution (which is excluded from the capital base) from the relevant user to make up the difference. In

305 NGR, r. 79(1)(a).

306 Jemena, *Access arrangement information*, August 2009, p. 113.

307 Jemena, *Access arrangement information*, August 2009, p. 113.

308 Jemena, *Access arrangement information*, August 2009, p. 113.

309 Jemena, *Access arrangement information*, August 2009, pp. 49, 116.

310 Jemena, *Access arrangement information*, August 2009, p. 113.

this manner only market expansion capital expenditure that complies with r. 79(2) of the NGR will be added to the capital base.³¹¹

The PB report considers the methodology used to develop the market expansion unit rates is sound and is based on historical costs with an allowance for future trends.³¹² The PB report considers the CEG report³¹³ provides the best possible basis for forecasting unit rates for market expansion capital expenditure, which therefore complies with r. 74 of the NGR. The PB report considers that, because market expansion projects are customer initiated, any market expansion project will comply with r. 79 of the NGR.³¹⁴

Both the EMRF and the EUAA submit that the level of capital expenditure is high compared with the demand forecasts. The AER considers that Jemena's proposal shows that new connections and demand are forecast to increase in a manner that reflects a decreasing rate of gas usage per new connection, particularly for volume customers (see chapter 11 of this draft decision). Market expansion capital expenditure is driven by new connections. The AER considers that the higher rate of new connections is consistent with a lower rate of increasing demand for gas in circumstances where the average gas usage per customer is falling.

The Wilson Cook report considers the forecast level of market expansion is reasonable in scope, but is not able to verify the cost efficiency of the proposed expenditure.³¹⁵ As outlined, the Wilson Cook report recommends that the JAM margin is removed and AER considers removing the overhead allocation.³¹⁶

The AER considers Jemena demonstrates a relationship between the proposed market expansion works and the forecast number of new connections as approved in the demand chapter of the draft decision. The new connections capital expenditure is necessary for Jemena to provide connections and services for new customers.

The AER also agrees with the Wilson Cook report that Jemena has not demonstrated that the proposed market expansion capital expenditure is the lowest sustainable cost.³¹⁷ While the AER considers some level of overhead may be appropriate if JAM undertakes the work, the AER has not been able to determine which market expansion projects are undertaken in-house by JAM and what level of overhead margin is appropriate. The AER considers that a level of market expansion capital expenditure of \$332.2 million (\$2009–10) is consistent with the NGR by removing the margin and overhead allocation.³¹⁸

311 Jemena, *Access arrangement information*, August 2009, pp. 129–130.

312 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 50.

313 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, June 2009.

314 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 49–50.

315 Wilson Cook report, p. 56.

316 Wilson Cook report, pp. 71–72.

317 NGR, r. 79(1).

318 NGR, r. 79.

Therefore, Jemena is required to amend its access arrangement as outlined at amendments 3.3 to 3.5.

System reinforcement, renewal and replacement capital expenditure

System reinforcement, renewal and replacement capital expenditure is designed to maintain capacity for existing customers and provide capacity for future market expansions. These types of projects include capacity development, mains and services renewals, mines subsidence, stay in business and supervisory control and data acquisition (SCADA), meter renewal and upgrade and government authority work.³¹⁹ The key factors underpinning capital expenditure forecasts for this category are:

- desktop estimates based on average unit rates from comparable recent projects
- ad hoc renewal of mains and services (forecasts are based on historical levels)
- for mines subsidence, forecast capital expenditure is based on the current scope of proposed activities as at April 2009
- life expectancy of assets (unit rates are based on historic actual rates and forecast 2009–10 rates)
- the moving of mains as required by authorities from time to time (forecasts are based on historical trends).³²⁰

Jemena's proposed system reinforcement, renewal and replacement capital expenditure of \$381.0 million (\$2009–10) is 40 per cent higher than the capital expenditure of \$272.5 million (\$2009–10) in the earlier access arrangement period.³²¹

Jemena submits that the proposed capital expenditure associated with this category is necessary to maintain and improve the safety or integrity of services, to comply with a regulatory obligation or requirement, or to maintain the service provider's capacity to meet levels of demand for services.³²² Jemena provides a high-level justification under the four criteria set out at r. 79(2)(c) of the NGR for the sub-categories that make up the proposed system reinforcement, renewal and replacement capital expenditure. A summary of this justification is set out at Table 3.7.

319 Jemena, *Access arrangement information*, August 2009, pp. 48, 113–115.

320 Jemena, *Access arrangement information*, August 2009, pp. 113–115.

321 Jemena, *Access arrangement information*, August 2009, pp. 49, 116.

322 NGR, r. 79(2)(c) and Jemena, *Access arrangement information*, August 2009, pp. 113–115.

Table 3.7: Jemena's justification for system reinforcement, renewable and replacement capital expenditure for 2010–2015 (\$m, real, 2009–10)

Sub-category	Relevant rule	Justification	Expenditure
Growth capacity development	r. 79(2)(c)(ii) r. 79(2)(c)(iv)	In terms of reliability and security Jemena must maintain and improve the integrity of services. Jemena must continue to deliver services in accordance with contracted terms and conditions and improve capacity for growth.	\$86.0 million 145 projects
Mains and services renewal	r. 79(2)(c)(i) r. 79(2)(c)(ii)	Jemena must fulfil obligations under the Gas Supply (Safety and Network Management) Regulation 2008, and where applicable the Pipelines Regulation 2005, and the pipeline licences held by Jemena in respect of the trunk pipelines. In terms of reliability and security Jemena must maintain and improve the integrity of services.	\$39.0 million 13 projects planned
Mines subsidence	r. 79(2)(c)(i) r. 79(2)(c)(ii)	Jemena must fulfil obligations under the Gas Supply (Safety and Network Management) Regulation 2008 and where applicable the Pipelines Regulation 2005 and the pipeline licences held by Jemena in respect of the trunk pipelines. In terms of reliability and security Jemena must maintain and improve the integrity of services.	\$5.5 million 1 project
Stay in business facilities and SCADA	r. 79(2)(c)(ii) r. 79(2)(c)(iv)	In terms of reliability and security Jemena must maintain and improve the integrity of services. Jemena must continue to deliver services in accordance with contracted terms and conditions and improve capacity for growth.	\$113.7 million 56 facilities and renewal projects 5 SCADA facilities and upgrade projects
Meter renewal and upgrade	r. 79(2)(c)(ii) r. 79(2)(c)(iii)	In terms of reliability and security Jemena must maintain and improve the integrity of services. Jemena must meet obligations imposed by the Gas Supply (Gas Meters) Regulation 2002 and any other relevant regulation.	\$133.7 million 15 upgrade and renewal projects
Government authority work	r. 79(2)(c)(iii)	Jemena must meet obligations imposed by the Gas Supply (Gas Meters) Regulation 2002 and any other relevant regulation.	\$3.1 million Allocation based on historical trend
Total			\$381 million

Source: Jemena, *Access arrangement information*, August 2009, pp. 112–115 and Jemena, *Access arrangement information*, August 2009, Appendix 7.6 (confidential).

The Wilson Cook report considers that the capital expenditure is prudent in terms of scope and timing, but the cost efficiency of this expenditure has not been demonstrated.³²³ The AER agrees that Jemena has not demonstrated that its forecast capital expenditure is that which would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.³²⁴

In order to support that the system reinforcement, renewal and replacement capital expenditure reflects efficient costs, the Wilson Cook report outlines the following information is required:

- business cases for the projects and programmes planned³²⁵
- detailed costing studies³²⁶
- evidence of competitively bid rates or robust market testing³²⁷
- reconciliation of the total overhead costs and margins.³²⁸

The Wilson Cook report concludes that no business cases or detailed project related papers were provided other than in respect of two particular projects, and the information on costs of the projects and programmes that was provided was minimal and did not include any bottom-up analysis.³²⁹

The Wilson Cook report outlines that accepted good industry practice would normally require the completion of a business case before commencement of work.

This is in line with Jemena's own capital project governance gates process.³³⁰ Preceding a business case, Jemena indicates that JAM provides it with information concerning project need, an assessment of alternative options, feasibility, refinement of cost estimates, review of scope, cost, time and quality, economic evaluation and project benefits.³³¹ This information was not provided to the AER for all individual projects listed in Jemena's capital expenditure proposal. While the AER notes that projects in the earlier years of the access arrangement period are generally at more advanced stages of planning than those in later years, the AER cannot approve capital expenditure without sufficient supporting documentation to ensure that the requirements of the NGR are met.

323 Wilson Cook report, p. 56–65.

324 NGR, r. 79(1)(a).

325 Wilson Cook report, pp. 55, 65.

326 Wilson Cook report, p. 65.

327 Wilson Cook report, p. 65.

328 Wilson Cook report, p. 65.

329 Wilson Cook report, pp. 64, 70–71.

330 Jemena, *Access arrangement information*, August 2009, p. 107.

331 Jemena, *Access arrangement information*, August 2009, p. 107.

In many cases the Wilson Cook report considers that the individual projects appear reasonable in timing and are scheduled to commence at a time consistent with timing that would be expected of a prudent operator.³³² The AER accepts this. However, in light of Wilson Cook's comments above and a lack of supporting documentation for individual projects, the AER considers that Jemena does not demonstrate whether the proposed works can be undertaken within the proposed timeframes. For instance, in the absence of a business case or a project management plan, Jemena does not demonstrate the availability of resources to manage and complete works within the proposed timeframe. Nor does Jemena demonstrate whether works that are scheduled in the latter part of the access arrangement period depend on the completion of works scheduled earlier in the access arrangement period and the inherent risks any delay to the earlier works have on the later works. This has a bearing on whether Jemena's capital expenditure can be considered efficient or if it is in accordance with accepted good industry practice.³³³ Consistent with this, Jemena's project governance gating process indicates that it would have at least a business case established for those projects planned within one year of commencement of the access arrangement period.³³⁴

The AER considers that while Jemena has provided a high level description of why projects meet the requirements of the NGR, the AER has not been given enough information to determine whether individual projects that make up the system reinforcement, renewal and replacement capital expenditure meet the requirements of r. 79 of the NGR.

The AER further notes that in addition to the concerns about the timing and delivery of projects there was no information provided that evaluated or demonstrated that the proposed capital expenditure was the least cost option selected. Nor does Jemena provide sufficient information to demonstrate as outlined above that together with the explicit margin and 6 per cent overhead that the total proposed project cost for system reinforcement, renewal and replacement capital expenditure is the lowest sustainable cost consistent with the NGR.³³⁵

In light of these comments, the AER and the Wilson Cook report cannot determine whether individual projects that make up the capital expenditure are efficient based on the information provided by Jemena.

The AER approves a baseline level of expenditure based on historical levels of capital expenditure for the majority of the proposed system reinforcement, renewal and replacement capital expenditure for the access arrangement period. This approach is adopted because there is an absence of information to support the higher proposed level of expenditure, and concerns that the proposed scope of work can be delivered without detailed business plans and capital programming within the proposed timeframes. Further, the AER considers that the historical capital expenditure is a

332 Wilson Cook report, pp. 56–65.

333 NGR, r. 79(1)(a).

334 Jemena, *Access arrangement information*, August 2009, p. 107.

335 NGR, r. 79(1)(a).

good indication of the level of capital expenditure that Jemena is capable of delivering in the access arrangement period.

Further the Wilson Cook report identifies three items that should not be included as capital expenditure, but should be treated as expenses. They are:

- mines subsidence (\$5.5 million, \$2009–10) because no new assets are created or lives of existing assets, when repaired, are not extended³³⁶
- ad hoc mains and services renewals (\$9.4 million, \$2009–10) because this is more in the nature of repair work, rather than renewals, with no significant improvement in the value of the asset base³³⁷
- pigging and integrity digs (\$13.7 million, \$2009–10) because these types of works are considered monitoring and maintenance and do not appear to relate to the addition of a new asset or to remedial work that would extend the life of an existing asset.³³⁸

The AER agrees with the Wilson Cook report and considers that these items are not conforming capital expenditure under r. 79(1) of the NGR as the expenditure is not of a capital nature incurred to provide, or in providing, pipeline services.³³⁹

The AER assesses Jemena's proposed expenditure on ad hoc mains and services renewals and pigging and integrity digs as operating expenditure in chapter 9 of the draft decision.

The AER notes there are four projects for which more detailed information is provided in the PB report and the Jemena access arrangement proposal. The information provided for these four projects contain some elements of what may be considered a supporting business case.³⁴⁰ These are:

- the Wakehurst Parkway secondary main project (\$8.3 million, \$2009–10)³⁴¹
- the Smithfield to Liverpool programmed mains and services renewal project (\$1.2 million, \$2009–10)³⁴²
- the Tempe primary regulating station (PRS) - regulator/instrumentation upgrade (\$1.0 million, \$2009–10)³⁴³

336 Wilson Cook report, pp. 63–64.

337 Wilson Cook report, pp. 62–63.

338 Wilson Cook report, p. 58.

339 NGR, r. 69.

340 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 32–47.

341 Jemena, *Access arrangement information*, August 2009, appendix 7.6.

342 Jemena, *Access arrangement information*, August 2009, appendix 7.6.

343 Jemena, *Access arrangement information*, August 2009, appendix 7.6.

- the industrial and commercial aged meter replacement project (\$23.5 million, \$2009–10).³⁴⁴

While complete business cases have not been provided for these projects the AER considers these projects are required to be completed during the access arrangement period. The AER proposes to approve capital expenditure for these four projects as additions to the baseline capital expenditure, but at a lower value to remove the profit margin and the flat 6 per cent overhead. The AER considers that capital expenditure is necessary:

- to maintain Jemena’s capacity to meet levels of demand for services at the time the capital expenditure is incurred (Wakehurst Parkway project)³⁴⁵
- to maintain and improve the safety of services, or to maintain the integrity of services, or to comply with a regulatory obligation or requirement (Smithfield to Liverpool project, Tempe project, and aged meter replacement project)³⁴⁶

Jemena proposes \$381.0 million (\$2009–10) for system reinforcement, renewal and replacement capital expenditure. When the adjustments discussed above are made the AER considers that capital expenditure of \$146.9 million (\$2009–10) is that which would be incurred by a prudent service provider acting efficiently in accordance with accepted good industry practice to achieve the lowest sustainable cost of providing services. This represents a 61.4 per cent reduction in the capital expenditure proposed by Jemena.

Therefore, Jemena is required to amend its access arrangement as outlined at amendments 3.3 to 3.5.

Non-system assets capital expenditure

Non-system assets capital expenditure relates to assets such as motor vehicles, leasehold improvements, buildings and land, IT and communications and planned fixed and mobile plant and equipment.³⁴⁷ The main drivers are asset condition (largely driven by age), plans to relocate the Jemena control centre, a range of IT projects (to overcome the under-investment in IT systems in recent years) and expenses associated with fixed and mobile plant and equipment.³⁴⁸

Jemena’s proposed non-system assets capital expenditure of \$133.2 million (\$2009–10) is 170 per cent higher than the capital expenditure of \$49.3 million (\$2009–10) in the earlier access arrangement period. A large increase in capital expenditure for the non-system assets category is due to the costs of proposed upgrades to Jemena’s IT systems of \$94.7 million (\$2009–10).³⁴⁹

344 Jemena, *Access arrangement information*, August 2009, appendix 7.6.

345 NGR, r. 79(2)(c)(iv).

346 NGR, r. 79(2)(c)(i)–(iii).

347 Jemena, *Access arrangement information*, August 2009, pp. 115–116.

348 Jemena, *Access arrangement information*, August 2009, pp. 111, 115–116.

349 Jemena, *Access arrangement information*, August 2009, p. 111.

With the exception of IT and communications, Jemena submits that the proposed capital expenditure is necessary to maintain the service provider's capacity to meet levels of demand for services existing at the time the capital expenditure is incurred.³⁵⁰

Excluding capital expenditure on IT and land, buildings and leasehold assets, the AER approves a baseline capital expenditure for non-system assets based on historical capital expenditure in the earlier access arrangement period as the amount that Jemena will require during the access arrangement period. Land and buildings and the IT capital expenditure are considered below.

The reasons the AER is applying a baseline approach for most non-system assets are similar to those outlined above in relation to system reinforcement, renewal and replacement capital expenditure. That is, on the basis of the information provided by Jemena neither the AER nor the Wilson Cook report³⁵¹ can determine whether the individual projects that comprise the capital expenditure are efficient and represent the lowest sustainable cost of delivering services.³⁵²

Concerning land buildings and leasehold capital expenditure, the Wilson Cook report considers that a component for the provision of workstations should be removed because this expenditure has not been justified.³⁵³ The AER agrees with this. The remaining capital expenditure in this category appears reasonable.³⁵⁴ The AER considers that this expenditure is reasonable, apart from the inclusion of the flat 6 per cent overhead allocation and the margin.³⁵⁵

In relation to the IT capital expenditure, Jemena submits that it is justified because the overall economic value of the expenditure is positive, or it is necessary to maintain and improve the safety or integrity of services, to comply with a regulatory obligation or requirement, or to maintain the service provider's capacity to meet levels of demand for services.³⁵⁶ Jemena relies on the KPMG report to support its proposal. However, neither Jemena nor the KPMG report demonstrates how the economic value of the proposed IT and communications capital expenditure is positive.³⁵⁷

Overall, the KPMG report considers the IT capital expenditure for the access arrangement period to be reasonable and largely aligned to the NGR requirements.³⁵⁸ Despite considering that the IT capital expenditure is compliant with r. 74 of the NGR, the KPMG report considers Jemena does not provide enough detail around the forecasts to enable a clear understanding of the basis of the forecasts. The KPMG

350 NGR, r. 79(2)(c)(iv).

351 Wilson Cook report, p. 70.

352 NGR, r. 79(1).

353 Wilson Cook report, p. 70.

354 Wilson Cook report, p. 70.

355 See discussion on the AMA.

356 Jemena, *Access arrangement information*, August 2009, p. 115 and Jemena, *Access arrangement information*, August 2009, appendix 7.2, pp. 20–23.

357 NGR, r. 79(2)(a).

358 Jemena, *Access arrangement information*, August 2009, appendix 7.5, p. 4.

report notes that only a high level description of costs is provided to support the IT capital expenditure.³⁵⁹

The KPMG report considers Jemena's IT program is compliant with r. 79 of the NGR. Nevertheless, the KPMG report states that the process Jemena undertook to determine whether the IT projects comply with r. 79 of the NGR is not defined.³⁶⁰

Consistent with its findings for other components of Jemena's proposed capital expenditure programme, the Wilson Cook report considers the forecast non-system assets capital expenditure is reasonable in scope, but it is not able to verify whether it is cost efficient. In coming to this conclusion, the Wilson Cook report highlights the lack of supporting information, business cases and detailed costings to support the IT capital expenditure.³⁶¹ Further the Wilson Cook report highlights that Jemena's own consultants require that the 6 per cent overhead and JAM margin be investigated, documented, verified and approved.³⁶²

The AER agrees with this conclusion and on this basis and the reasons mentioned above³⁶³ removes the profit margin and 6 per cent overhead from all the proposed IT capital expenditure. The AER considers that Jemena has not provided sufficient information that the forecast capital expenditure, including the flat 6 per cent overhead allocation and the profit margin, are efficient and represent the lowest sustainable costs of delivering services, consistent with the NGR.³⁶⁴

Further the Wilson Cook report identifies three items and relevant amounts that should be removed from the capital base:

- a contingency sum for customer services, metering and billing (\$2.37 million, \$2009–10)³⁶⁵ because the purpose of this contingency amount was not identified³⁶⁶
- organic growth infrastructure as a component of IT infrastructure (\$2.0 million, \$2009–10)³⁶⁷ because this item is not explained and costs relative to software licences linked to connection numbers appear to be accounted for separately³⁶⁸
- AER - market changes and access arrangements (\$1.1 million, \$2009–10)³⁶⁹ because this item is not explained and should not be capitalised.³⁷⁰

359 Jemena, *Access arrangement information*, August 2009, appendix 7.5, p. 19.

360 Jemena, *Access arrangement information*, August 2009, appendix 7.5, p. 33.

361 Wilson Cook report, pp. 66–68.

362 Wilson Cook report, p. 68.

363 See discussion on the AMA.

364 NGR, r. 79.

365 Jemena, *Access arrangement information*, August 2009, appendix 7.2, p. 67 and Jemena, Response to AER questions received on 30 October 2009–tranche 3 - IT questions, 1 December 2009, p. 20.

366 Wilson Cook report, p. 69.

367 Jemena, *Access arrangement information*, August 2009, appendix 7.2, p. 74.

368 Wilson Cook report, p. 69.

369 Jemena, *Access arrangement information*, August 2009, appendix 7.2, p. 59.

The AER agrees with the Wilson Cook report regarding these issues. The AER considers that Jemena does not demonstrate that these items meet the requirements of r. 79 of the NGR because they are not of a capital nature consistent with the definition of capital expenditure. The AER therefore removes these items from the proposed capital expenditure.

Further, the AER notes that there are anomalies in Jemena's access arrangement proposal as shown in Table 3.8.

Table 3.8: Anomaly with Jemena's forecast IT expenditure for 2010–2015 (\$m, real 2009–10)

	2009–10	2010–11	2011–12	2013–14	2014–15	Total
Appendix 7.3	21.8	16.5	13.4	25.6	30.6	107.9
IT strategic plan	19.8	15.0	12.0	22.3	25.6	94.7

Source: Jemena, *Access arrangement information*, August 2009, appendix 7.3, p. 6; Jemena, *Access arrangement information*, August 2009, appendix 7.2, p. 75; Jemena, *Access arrangement information*, August 2009, pp. 111, 116.

The AER notes Jemena's IT strategic plan has IT capital expenditure of \$94.7 million (\$2009–10),³⁷¹ but a value of \$107.9 million (\$2009–10) in the total non-system asset capital expenditure of \$133.2 million (\$2009–10) in appendix 7.3 of the access arrangement information.³⁷² Jemena does not explain this anomaly between the \$107.9 million (\$2009–10) value and the \$94.7 million (\$2009–10) value.

The AER also notes that Jemena's main suppliers of software and technologies have increased prices to Jemena across all applications and hardware products ranging from 25 per cent to 33 per cent and so Jemena has experienced a one off step change in the costs of software licences and IT infrastructure.³⁷³ Jemena submits that the outlook for software and hardware prices is priced on the long term average for the Australian dollar and prices are typically set once a year based on an annual agreement.³⁷⁴

The AER cannot determine from the information provided by Jemena how the IT capital expenditure forecasts are adjusted for exchange rate movements, the extent to which Jemena hedges its exchange rate risk or incurs these costs as a part of WOBCA, or if these risks are material.

The AER notes Jemena's concern that there has been an historical underinvestment in IT systems³⁷⁵ and, as the Wilson Cook report notes, Jemena may have fallen behind

370 Wilson Cook report, p. 69.

371 Jemena, *Access arrangement information*, August 2009, p. 111.

372 Jemena, *Access arrangement information*, August 2009, p. 116; Jemena, *Access arrangement information*, August 2009, appendix 7.3, p.6.

373 Jemena, *Access arrangement information*, August 2009, appendix 7.2, p. 18.

374 Jemena, *Access arrangement information*, August 2009, appendix 7.2, p. 18.

375 Jemena, *Access arrangement information*, August 2009, p. 111.

the Australian gas industry in the use of IT systems and applications.³⁷⁶ The AER notes that a baseline approach to forecasting IT may not be appropriate in this case given the historical underinvestment.

The AER notes that Jemena needs to improve its IT systems and approves the proposed IT capital expenditure except for those items identified in the Wilson Cook report as not being adequately justified or explained. The AER reduces the proposed amount of \$107.9 million (\$2009–10) by removing those items and the flat 6 per cent overhead cost and the profit margin that applies to the proposed IT capital expenditure in the access arrangement period for the reasons outlined above.³⁷⁷

Jemena proposes \$133.2 million (\$2009–10) for non-system assets capital expenditure. The AER considers that capital expenditure of \$96.8 million (\$2009–10) is that which would be incurred by a prudent service provider acting efficiently in accordance with accepted good industry practice to achieve the lowest sustainable cost of providing services.³⁷⁸ This represents a reduction of 27.4 per cent in the capital expenditure proposed by Jemena.

Jemena is required to make amendments 3.3 to 3.5.

Cost escalators

Jemena proposes to apply a number of real cost escalators to both its forecast operating expenditure and capital expenditure. The AER's assessment of Jemena's proposed escalators is covered in detail in this section of the draft decision as relevant to both capital expenditure and operating expenditure.

Jemena's approach is to classify expenditure into different input cost categories and to then escalate these categories individually.³⁷⁹ The categories Jemena proposes are:

- enterprise bargaining agreement (EBA), electricity, gas and water (EGW) labour
- contract EGW labour
- aluminium
- steel
- polyethylene
- concrete.

Jemena proposes to escalate these cost categories at the rates in Table 3.9. These rates are based on those developed in a report written by CEG (the CEG cost escalators

376 Wilson Cook report, p. 68.

377 See discussion on the AMA.

378 NGR, r. 79.

379 Jemena, *Access arrangement information*, August 2009, p. 82.

report).³⁸⁰ Jemena's proposed escalators for operating expenditure are based on financial years, while those proposed for capital expenditure are based on calendar years.

Table 3.9: Real cost escalators (%)

Financial year	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
EBA EGW labour	1.8	1.3	2.1	1.9	1.6	1.8
Contract labour	1.8	1.4	2.1	4.0	4.4	4.1
Aluminium	-7.9	9.9	9.0	7.7	6.6	5.9
Steel	-18.0	8.4	6.3	1.5	0.9	0.8
Polyethylene	0.6	2.0	1.1	0.3	0.2	0.2
Concrete	3.0	1.5	3.4	3.0	1.8	0.9
Calendar year	2009	2010	2011	2012	2013	2014
EBA EGW labour	1.6	2.3	2.2	2.0	1.7	1.7
Contract labour	1.9	1.5	1.6	3.1	4.4	4.3
Aluminium	-29.5	12.5	9.2	8.6	7.0	6.2
Steel	-31.6	9.9	6.5	3.8	1.0	0.9
Polyethylene	-7.0	4.5	1.5	0.7	0.2	0.2
Concrete	6.8	0.7	2.7	3.6	2.3	1.3

Source: Jemena, *Access arrangement information*, August 2009, Appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, June 2009, p. 2.

Jemena proposes additional escalators to account for the effect of a Carbon Pollution Reduction Scheme (CPRS).³⁸¹ These are shown in Table 3.10. The CPRS related escalators are proposed to be added to those above to arrive at a final real cost escalation rate.

380 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*.

381 Referred to by Jemena as an emissions trading scheme.

Table 3.10: Emissions trading scheme escalators (%)

Financial year	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Aluminium	0.0	0.0	0.3	0.4	0.1	0.0
Steel	0.0	0.0	0.7	1.2	0.1	0.1
Polyethylene	0.0	0.0	0.5	0.8	0.1	0.1
Concrete	0.0	0.0	0.3	0.5	0.1	0.1
Calendar year	2009	2010	2011	2012	2013	2014
Aluminium	0.0	0.0	0.1	0.4	0.3	0.0
Steel	0.0	0.0	0.3	1.1	0.7	0.1
Polyethylene	0.0	0.0	0.2	0.7	0.5	0.1
Concrete	0.0	0.0	0.1	0.4	0.3	0.0

Source: Jemena, *Access arrangement information*, August 2009, Appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, June 2009, p. 3.

While the AER considers that Jemena’s proposed use of financial years to project operating expenditure is appropriate, it does not consider it appropriate to use calendar years for capital expenditure. Instead, financial years should be used for both operating expenditure and capital expenditure.

The AER considers that the use of calendar years has the effect of introducing a six month lag to capital expenditure cost escalators. This is illustrated by considering the capital expenditure escalators applied in the 2014–15 financial year. Jemena proposes that, for capital expenditure, this should be based on the calendar year escalator which is calculated by comparing the average price in 2014 and the average price in 2013. As such it does not include compensation for price changes in the first half of 2015.

As this proposal has the same effect as introducing a six month lag to the real cost escalators, the AER considers that its previous analysis of lags remains valid, the AER found insufficient evidence for the use of lags between changes in raw materials prices and input cost prices.³⁸² The AER maintains its assessment³⁸³ that financial year escalators provide the best forecast possible in the circumstances, as required by r. 74(2) of the NGR.

Labour escalators

382 AER, *Final Decision: New South Wales distribution determination 2009–10 to 2013–2014*, p. 129.

383 AER, *Final Decision: New South Wales distribution determination 2009–10 to 2013–2014*, p. 129.

The CEG cost escalators report separately forecasts changes in EBA labour and contract labour costs.³⁸⁴ The EBA labour cost forecasts rely on actual changes in staff costs where available and where actual data is not available they are based on an average of forecasts from BIS Shrapnel, Macromonitor and Econtech.³⁸⁵ The only difference for contract labour costs, is that Econtech's forecasts are not used to calculate labour escalation rates. The Macromonitor report was prepared in March 2009 while the BIS Shrapnel report was prepared in May 2009. The CEG cost escalators report also applies a method which ensures that the transition from annual historical labour cost data to quarterly forecasts is implemented in an unbiased manner.³⁸⁶

The AER considers that since the publication of these reports, there have been significant changes in the economic outlook as well as fluctuations in some relevant economic data which may result in these older reports no longer providing the best forecast possible in the circumstances, as required by r. 74(2)(b) of the NGR. Therefore the AER commissioned a report from Access Economics to forecast labour costs for the electricity, gas and water sector of the Australian economy on a state by state basis to confirm whether weaker employment conditions in the electricity, gas and water sector has impacted labour costs.³⁸⁷

The methodology used by Access Economics forecasts wages using a formal macroeconomic model based on business cycle factors, productivity factors and relative wage factors.³⁸⁸ This approach does not include analysis of business specific arrangements such as collective and individual agreements. Even though Access Economics uses industry sector data to forecast labour cost escalators, the AER considers the fact that these forecasts are able to take into account more recent developments in the labour market more than offsets any limitations in not being able to forecast EBA and contract cost escalators.

The AER considers that consideration of more up to date forecasts by Access Economics is consistent with the requirements of r. 79 of the NGR and r. 74(2) of the NGR because it takes into consideration recent developments in the economy.

The AER has compared the forecasts prepared by CEG and the more recent forecasts prepared by Access Economics. The AER does not accept Jemena's proposed real labour cost escalators as it considers the Access Economics forecasts better account for more recent developments in the economic outlook. Further, the AER considers that these escalators should be updated in the final decision to allow for consideration of any further changes in economic circumstances to determine an estimate consistent with the requirements of the NGR.

384 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, p. 30.

385 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, pp. 30–38.

386 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, pp. 30–38.

387 Access Economics, *Forecast growth in labour costs*, 16 September 2009.

388 Access Economics, *Forecast growth in labour costs*, 16 September 2009. pp. 100–108

The AER considers EMRF's submission that Jemena has demonstrated an increase in efficiency offsetting real wage increases does not clearly establish that there has been such an increase in efficiency. The AER considers that, given the yearly variance in both operating and capital expenditure projects and the possibility of deferring proposed expenditure, it is extremely difficult to calculate an annual efficiency improvement from the high level data presented in the access arrangement information. Further, the AER considers that a more appropriate method to correct for productivity improvements would be to use a productivity adjusted real labour cost index for EGW and general labour.

Materials escalators

(a) Application of materials escalators to capital expenditure

The AER notes that Jemena proposes to include cost escalators for a number of input materials.³⁸⁹ To do so, it uses a general materials cost escalator which is a simple average of the escalators for aluminium, steel, polyethylene and concrete. In addition to this, Jemena also proposes to separately apply an escalator for concrete.

The AER considers that applying a simple average to create a general materials cost escalator is not likely to accurately reflect the proportion of materials used in the capital expenditure program. In the absence of information, the AER is unable to establish the correct proportion of material costs to attribute to each material input. The AER considers that the proposed approach of applying an average or general real cost escalator across the material input costs does not provide the best estimate possible in the circumstances as required by r. 74(2)(b) of the NGR.

The AER notes EMRF's submission that CPI should be used to escalate materials. For operating expenditure the AER considers that the CPI provides a reasonable basis and the best estimate possible in the circumstances as required by r. 74(2)(b) of the NGR and is consistent with r. 79 of the NGR. For capital expenditure, however, the AER considers that there is no reason why the price changes of the materials considered cannot diverge from the CPI as the CPI is a far more broadly based index. Accordingly, increases in the materials considered may be offset by decreases in other items not used in gas distribution but which are used in calculating the CPI. The AER considers that it is appropriate to apply specific materials escalators for capital expenditure. This is because capital expenditure programs are project based and so allow for an estimation of the specific amount of each material that will be used in a project.

(b) Aluminium and steel

To forecast real cost escalators for aluminium, the CEG cost escalators report relies on futures prices for aluminium sourced from the London Metal Exchange (LME) for the period to July 2011, thereafter it relies on Consensus Economics' forecasts to derive real cost escalators for the remainder of the access arrangement period. As Consensus Economics' long term forecasts cover a time period of five to ten years, the CEG cost escalators report assumes that these forecasts refer to a period of 7.5

389 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*.

years. The CEG cost escalators report then applies linear interpolation for available LME futures prices at three months, seven months and 27 months, and the Consensus Economics' forecast of 90 months.

The CEG cost escalators report uses Consensus Economics' forecasts to derive the real cost escalators for steel over the access arrangement period, as no liquid futures price market exists for steel.³⁹⁰ This approach is consistent with that approved by the AER in recent decisions.

The AER acknowledges the EMRF's submission on exchange rates.³⁹¹ The AER notes the difficulty associated with forecasting exchange rates, has analysed the approach used in the CEG cost escalator report and has considered alternative ways to forecast exchange rates. A reasonable method that produces a better estimate than the proposed method has not been identified. This issue is also relevant to the AER's assessment of the proposed escalator for polyethylene.

The AER accepts Jemena's proposed approach for calculating real cost escalators for aluminium and steel and the AER considers the method applied is reasonable.³⁹² However, but the AER uses more up to date forecasts to provide the best forecast possible in the circumstances, as required by r. 74(2)(b) of the NGR and for consistency with r. 79 of the NGR.

(c) Polyethylene and nylon-11

Jemena predominantly uses nylon-11 pipes but as the CEG cost escalators report notes there is no liquid futures market or long-term price forecast available for this material.³⁹³ The CEG cost escalators report also notes that polyethylene is a substitute for the use of nylon-11 in gas mains and that some gas network providers in Australia use polyethylene pipes in preference to nylon-11. The CEG cost escalators report proposes that polyethylene prices are a reasonable substitute for forecasting nylon-11 prices.³⁹⁴

In order to forecast the real cost escalators for polyethylene over the access arrangement period, Jemena proposes a two stage process. First, Jemena demonstrates a historical relationship between crude oil prices and thermoplastic resin (which includes polyethylene) prices using an econometric model. Second, the historical relationship is used to create a forecast price index for thermoplastic resin. Forecasting over the access arrangement period is possible as crude oil futures prices are available from the New York Mercantile Exchange (NYMEX) until 2017.³⁹⁵

390 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, p. 20.

391 EMRF, *Submission to the AER*, 9 November 2009, pp. 29–30.

392 NGR, r. 74(2)(a).

393 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, pp. 22–24.

394 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, pp. 22–24.

395 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, p. 21.

The AER considers that the econometric model proposed by Jemena appears to outperform other models considered by Jemena's consultants.

The AER has identified two weaknesses with Jemena's proposed method for forecasting a real price escalator for nylon-11. The first is the implied relationship between nylon-11 and crude oil. The second is the construction of the forecast price index.

The AER remains unconvinced about the validity of the relationship between nylon-11 and crude oil, as crude oil is not an input into the production of nylon-11. The AER notes that neither Jemena's submission nor the CEG cost escalators report provides sufficient evidence to support a relationship between nylon-11 and crude oil prices other than the fact that nylon-11 and polyethylene are substitutes. The AER does not consider that the escalator has been arrived at on a reasonable basis.³⁹⁶

The AER also reviewed the basis for establishing the forecast price index. The first stage estimates the historical relationship between crude oil prices and thermoplastic resin prices and to do so uses price indexes from the Bureau of Labour Statistics. These price indexes show changes in nominal prices paid by producers for these commodities. However, when forecasting the price index for polyethylene, the forecast crude oil price index is based on the change in real crude oil prices denominated in Australian dollars.

The AER does not consider this approach is appropriate as the estimated relationship between crude oil prices and thermoplastic resin prices includes the effects of inflation. This is because the relationship is based on nominal prices. Applying this approach leads to double counting of inflation as the forecast price, which includes the influence of inflation, is inflated again in the calculation of revenue. Further, the AER considers that financial information and calculations should be done on a consistent basis as required under r. 73(3) of the NGR. However, Jemena's proposal uses different bases for the forecast price index by using a nominal price index based on US dollars to develop the econometric model and a real price index based on Australian dollars to develop the forecast price index.

As the relationship between nylon-11 and polyethylene has not been clearly established and there is the potential for double counting of inflation, the AER does not consider that the method proposed by Jemena for forecasting a price index for polyethylene represents the best forecast or estimate possible in the circumstances as required by r. 73(3) of the NGR and r. 74(2) of the NGR. As such, the AER does not accept Jemena's proposed real cost escalator for polyethylene.

(d) Concrete

The cost escalator for concrete (in the CEG cost escalators report) relies on a report from Macromonitor (the Macromonitor report).³⁹⁷ The Macromonitor report examines three historical price indexes related to concrete: 'ready mixed concrete used in

396 NGR, r. 74(2)(a).

397 Macromonitor, *Forecasts of cost indicators - Electricity, gas and water sector New South Wales*, March 2009.

houses’, ‘concrete slurry manufacturing – price of output’ and ‘ready mixed concrete used in buildings other than houses’. The Macromonitor report then examines the relationship between the ready mixed concrete used in houses price index and total construction work done. This relationship forms the basis of the forecasts in the Macromonitor report.³⁹⁸

The AER considers that it is not clear from the Macromonitor report which price index is being forecast. The AER also notes that the ‘ready mixed concrete used in houses’ price index and the price indexes for ‘concrete slurry manufacturing – price of output’ and ‘ready mixed concrete used in buildings other than houses’ seem to diverge in 1992. Given the differences in the price indexes, the AER considers that to derive a best estimate arrived at on a reasonable basis Jemena’s proposal needs to outline which price index is used.

The forecasting methodology in the Macromonitor report is not transparent or reproducible. The Macromonitor report only illustrates the annual percentage changes in the ready-mixed concrete used in houses price index and total construction work done; but does not demonstrate the statistical validity of this relationship. The AER does not consider that this provides a reasonable basis to verify that the forecast is the best possible in the circumstances as required by r. 74(2) of the NGR.

As it is unclear which price index is being forecast and how the forecast is derived, the AER does not consider that the proposed real cost escalator for concrete meets the requirements of r. 74(2)(b) of the NGR.

Carbon pollution reduction scheme escalators

To forecast the effects of the CPRS on the above materials inputs, the CEG cost escalators report analyses input–output tables to estimate the amount of carbon dioxide (CO₂) generated in the production of the input materials. This estimated quantity of CO₂ is then priced according to expected prices under the CPRS.

The escalators incorporating the cost of the CPRS developed in the CEG cost escalators report are based on the assumption that forecast prices for materials do not include the potential costs relating to the CPRS.³⁹⁹ However, the AER considers that this assumption contradicts another statement in the CEG cost escalators report that if there were a better estimate (than futures market prices) of future prices then investors could expect to profit by buying/selling futures until today’s price reflected the best estimate of spot prices on the relevant future date.⁴⁰⁰ The AER considers that futures prices include forecast costs for the CPRS and provide a best estimate of forecast material prices as required under r. 74(2)(b) of the NGR.

As an example, when the Australian Government announced on 4 May 2009 that the commencement of the CPRS has been delayed for one year to 1 July 2011, the

398 Macromonitor, *Forecasts of cost indicators - Electricity, gas and water sector New South Wales*, March 2009, pp. 22–25

399 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, pp. 25–29.

400 Jemena, *Access arrangement information*, August 2009, appendix 6.4: CEG, *Escalation factors affecting expenditure forecasts a report for Jemena Gas Networks*, p. 8.

forward electricity contract price for 2010–11 dropped by up to 13 per cent, indicating that estimates of the costs of the CPRS are taken into account in forward prices.⁴⁰¹

As forecasts for cost escalators that are based on future prices will already have the cost of the CPRS included, the AER does not consider that the proposed real cost escalators relating to the CPRS represent the best forecast possible in the circumstances as required by r. 74(2)(b) of the NGR. Accordingly, the AER does not accept Jemena’s proposed real cost escalators relating to the CPRS.

Summary of Jemena’s proposed capital expenditure escalators

For the reasons outlined above, the AER is not satisfied that the proposed cost escalators comply with the requirements of r. 79 of the NGR and r. 74(2) of the NGR. As a result the AER requires Jemena to amend its forecast capital expenditure by applying the real cost escalators set out in Table 3.11 and amendment 3.3 below. The AER considers that these escalators should be updated in the final decision to allow for consideration of changes in economic circumstances and updated data to meet the relevant rule requirements.

The AER notes that the purpose of its cost escalation methodology is to create a targeted escalation formula specifically directed at the Jemena's costs, as is supported by the EMRF.

Table 3.11: Capital expenditure escalation factors for Jemena (% , real)

	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
EBA EGW labour	2.1	0.1	0.5	1.1	1.5	1.4
Contract labour	2.1	0.1	0.5	1.1	1.5	1.4
Aluminium	–4.9	30.0	16.2	6.6	2.5	–2.4
Steel	–27.7	34.6	20.9	5.1	1.0	–1.0
Polyethylene	0.0	0.0	0.0	0.0	0.0	0.0
Concrete	0.0	0.0	0.0	0.0	0.0	0.0

Summary of forecast capital expenditure

In light of the analysis above, the AER does not consider that Jemena’s proposed forecast capital expenditure complies with the requirements of r. 79 of the NGR. That is, it does not represent capital expenditure that would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of providing services.

The AER also considers that Jemena’s forecast capital expenditure does not represent the best forecasts possible in the circumstances.⁴⁰²

401 AER, *Weekly Market Analysis*, 26 April–2 May 2009 and 3 May–9 May 2009.

Table 3.12 shows the capital expenditure proposed by Jemena compared with the capital expenditure which the AER considers satisfy the new capital expenditure criteria of the NGR.⁴⁰³

Table 3.12: Jemena's proposed and approved capital expenditure for 2010–2015 (\$m, 2009–10, real)

	2009–10	2010–11	2011–12	2013–14	2014–15	Total
Market expansion						
Jemena proposed	64.7	75.6	80.7	76.8	73.2	371.0
AER approved	57.0	68.3	73.2	68.8	64.9	332.2
System reinforcement/renewal/replacement						
Jemena proposed	82.7	71.4	69.0	69.9	88.0	381.0
AER approved	33.2	29.9	27.5	27.9	28.4	146.9
Non-system assets						
Jemena proposed	25.7	20.1	18.1	34.2	35.0	133.2
AER approved	20.4	15.9	13.3	23.2	24.0	96.8
Total capital expenditure						
Jemena proposed	173.1	167.1	167.8	180.9	196.2	885.2
AER approved	110.6	114.1	114.0	119.9	117.3	575.9

Jemena is required to amend its access arrangement information as outlined in amendment 3.3.

3.6.3.2 Capital contributions

Jemena submits it excludes capital contributions of users from the capital base and its proposal is consistent with the NGR.⁴⁰⁴ Rule 82(1) of the NGR provides for a user to make a capital contribution towards a service provider's capital expenditure. Accordingly, Jemena's proposal is consistent with r. 82(1) of the NGR.

402 NGR, 74(2)(b).

403 NGR, r. 79.

404 Jemena, *Access arrangement information*, August 2009, p. 130.

Jemena further submits that by only adding its own contribution to the cost of the asset to the capital base, Jemena is prevented from benefiting through increased revenue from the user's contribution.⁴⁰⁵

Rules 82(2) and 82(3) allow a user's contribution to be added to the capital base provided the access arrangement contains a mechanism preventing the service provider from benefitting through increased revenue from the user's contribution. As Jemena excludes capital contributions for its capital base, r. 82(2) of the NGR and r. 82(3) of the NGR do not apply.

3.6.3.3 Depreciation

The AER's consideration of key issues in relation to Jemena's depreciation schedule is set out in chapter 4 of the draft decision.

In addition to the matters outlined in chapter 4 as a consequence of the required amendments to Jemena's forecast capital expenditure, adjustment to the capital base for inflation and the removal of a redundant asset from the proposed roll forward capital base, the AER requires an amendment to Jemena's forecast depreciation under r. 78 of the NGR. The depreciation calculated by the AER for the earlier access arrangement period compared with Jemena's proposed depreciation is shown in Table 3.13. Jemena must amend its forecast depreciation as outlined in amendment 3.4.

Table 3.13: Forecast depreciation for the access arrangement period (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Jemena's proposal	89.4	100.2	109.9	120.7	135.8	556.0
AER draft decision	88.2	96.7	104.9	112.1	122.0	523.8

Source: Jemena, *Access arrangement information*, August 2009, p. 154 and AER analysis.

3.6.3.4 Forecast disposals

Jemena proposes annual amounts for disposals of assets to be deducted from the capital base in the access arrangement period.⁴⁰⁶ Jemena's forecast disposals in the access arrangement period total \$12.9 million (\$nominal), compared with \$14.1 million (\$nominal) for the earlier access arrangement period.

Jemena forecasts annual disposals for mains, services and vehicles based on the average amounts in real terms for the years 2006 to 2008.⁴⁰⁷ In addition, Jemena submits that the replacement of regulators in 2009–10 and 2010–11 is required to maintain safety at acceptable operating levels.⁴⁰⁸ The AER considers that Jemena's

405 Jemena, *Access arrangement information*, August 2009, p. 130.

406 Jemena, *Access arrangement information*, August 2009, pp. 125, 127.

407 Jemena, *Access arrangement information*, August 2009, p. 130.

408 Jemena, *Access arrangement information*, August 2009, p. 130.

access arrangement proposal complies with the requirements of r. 78(d) of the NGR, which requires that the projected capital base include the forecast value of pipeline assets to be disposed of in the access arrangement period.

3.6.3.5 Adjustment to the capital base for inflation

The AER's consideration of Jemena's approach to estimating expected inflation is discussed in chapter 5 of the draft decision.

The AER notes EMRF's submission that the RBA's target inflation range does not provide an accurate method for forecasting inflation.⁴⁰⁹ The AER considers that the use of the RBA's target range as a method for forecasting CPI is acceptable. This is considered in more detail in chapter 5.

For reasons discussed in chapter 5 the AER does not consider that Jemena's forecast inflation rate of 2.38 per cent represents the best forecast possible in the circumstances.⁴¹⁰ Instead, the AER uses a geometric average comprised of the RBA's short-term inflation forecasts and the target range mid-point of 2.5 per cent to estimate an inflation rate of 2.47 per cent for the access arrangement period. Jemena must amend its adjustment to the capital base for forecast inflation by making amendment 3.5.

3.6.3.6 Summary of the projected capital base

The AER has considered the components of Jemena's proposed projected capital base. Given the amendments required to Jemena's proposed capital expenditure, forecast depreciation, adjustment of the capital base for inflation and adjustment to the proposed opening capital base, the AER considers that Jemena's proposed projected capital base does not comply with r. 74(2) and r. 78 of the NGR. Jemena is required to amend its forecast capital base as set out at amendment 3.5.

3.6.3.7 Key performance indicators

In relation to the EUAA's submission that the AER considers benchmarking and that forecast capital expenditure growth per customer should be justified, the AER notes the benchmark assessment that the PB report and Jemena use to support its proposed capital expenditure.⁴¹¹ The PB report concludes that:

- the average annual capital expenditure as a percentage of the value of the asset base for Jemena is approximately 5.3 per cent, compared with a sample of six other gas distribution businesses whose capital expenditure ratios range from 4 to 9 per cent⁴¹²
- the absolute capital expenditure per customer is high for Jemena. However, networks with a higher customer density would be expected to show a lower cost per connection because of the smaller length of mains required to serve each

409 EMRF, *Submission to the AER*, 9 November 2009, p. 29.

410 NGR, r. 74(2)(b).

411 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 14–17.

412 Jemena, *Access arrangement information*, August 2009, appendix 7.4, pp. 14–15.

customer. When the density of customers on Jemena's network is taken into account (which is relatively low) the expenditure per connection compares well with other network operators⁴¹³

- when total capital expenditure is compared to the composite size factor (taking account of differences in size, number of customers and delivered volumes), Jemena compares well with other operators.⁴¹⁴

Overall the PB report concludes that Jemena's level of capital expenditure is in line with what would be expected for an operator of this network.⁴¹⁵

In reaching this conclusion, PB acknowledges the limitations of benchmarking, noting:

- there are difficulties in the benchmarking approach because data on actual capital expenditure by other Australian gas distribution businesses is not readily available⁴¹⁶
- benchmarking alone and comparison to peer businesses is not sufficient to determine conforming expenditure under the NGR⁴¹⁷
- benchmarking comparisons between gas distribution businesses is difficult because of inherent differences in the businesses such as customer density, network age, size and condition, gas delivered per customer, climate, asset management strategies and local cost differences as each of these factors influences the actual capital expenditure.⁴¹⁸

The Wilson Cook report reviews PB's benchmarking study and concludes that benchmarking of capital expenditure is generally of limited relevance.⁴¹⁹ The Wilson Cook report considers that capital expenditure ought to be determined by the particular requirements of the network concerned, that is affected by long-term planning considerations that are difficult to account for in benchmarking studies and is characterised by lumpy investment.⁴²⁰

The AER has considered the results of PB's benchmarking study. The AER agrees with the Wilson Cook report that such analysis has its limitations and cannot alone be used to assess whether capital expenditure complies with r. 79 of the NGR.

413 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 16.

414 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 17.

415 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 17.

416 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 12.

417 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 12.

418 Jemena, *Access arrangement information*, August 2009, appendix 7.4, p. 12.

419 Wilson Cook report, p. 48.

420 Wilson Cook report, p. 48.

3.6.4 Opening capital base for the next access arrangement period

The AER considers Jemena's proposal to use forecast depreciation (which is based on forecast capital expenditure) in establishing the opening capital base for the access arrangement period commencing 1 July 2015 is consistent with r. 90 of the NGR. This is also consistent with the approach outlined in the Access arrangement guideline (AAG).⁴²¹

3.6.5 Other access arrangement proposal provisions relevant to the capital base

3.6.5.1 Non-conforming capital expenditure

The AER considers Jemena's clause 4.1 of its access arrangement proposal concerning the treatment of non-conforming capital expenditure (recovered through capital contributions or surcharges, or placed in a speculative capital expenditure account) is consistent with rr. 81–84 of the NGR.⁴²²

As an incentive mechanism, under clause 4.2 of its access arrangement proposal, Jemena proposes that capital expenditure to unreticulated areas is added to the speculative capital expenditure account. Under Jemena's proposal, capital expenditure assessed by the AER as conforming is not rolled into the capital base until five years after the specific project commences. The AER considers that this aspect of Jemena's proposal is inconsistent with rr. 81–84 of the NGR. The AER's assessment of the proposed incentive mechanism is contained in chapter 7 of the draft decision.

3.6.5.2 Capital redundancy policy

The AER considers that the capital redundancy policy Jemena proposes does not comply with r. 77(2)(e) of the NGR, which requires that redundant assets identified during an access arrangement period be removed from the opening capital base of the subsequent access arrangement period. Jemena proposes a redundancy policy that gives the AER the discretion to remove the value of redundant assets from the opening capital base. The AER considers that under r. 77(2)(e) of the NGR there is no discretion and redundant assets must be removed when determining the opening capital base for an access arrangement period. In light of this, the AER considers that Jemena's proposed capital redundancy is likely to cause uncertainty for users and prospective users.⁴²³ For these reasons Jemena is required to delete its proposed redundancy policy as set out in amendment 3.6.

3.7 Conclusion

Opening capital base

The AER does not propose to approve the opening capital base proposed by Jemena for the access arrangement period as it does not comply with r. 77(2) of the NGR and requires Jemena to make amendments 3.1 to 3.2 set out below.

421 AER, *Access arrangement guideline*, March 2009, pp. 61–62.

422 Jemena, *Access arrangement proposal*, August 2009, p. 29.

423 NGR, r. 85(4).

Projected capital base

The AER does not propose to approve the projected capital base proposed by Jemena as it does not comply with r. 78 and r. 79 of the NGR and requires Jemena to make amendments 3.3 to 3.5 as set out below.

Opening capital base for the next access arrangement period

The AER proposes to approve Jemena's proposed depreciation on the basis of forecast depreciation (based on forecast capital expenditure) for establishing the opening capital base as this complies with r. 90 of the NGR.

Other provisions of the access arrangement proposal

The AER considers that Jemena's proposed treatment of non-conforming capital expenditure is consistent with rr. 81–84 of the NGR.

The AER does not propose to approve the capital redundancy mechanism proposed by Jemena to remove redundant assets from the capital base proposed as it does not comply with r. 77(2)(e) of the NGR and r. 85(1) of the NGR and requires Jemena to make amendment 3.6 set out below.

3.8 Amendments required to the access arrangement proposal

Before the proposed revised access arrangement can be accepted, Jemena must make the following amendments:

Amendment 3.1: amend the access arrangement information to delete Table 8.3 and replace it with the following:

Table 3.14: Inflation rates for adjusting the capital base (%)

	2005–06	2006–07	2007–08	2008–09	2009–10
Inflation rates	2.80	3.25	2.96	3.69	1.50

Amendment 3.2: amend the access arrangement information to:

- delete Table 8.4 and replace it with the following:

Table 3.15: Roll forward of combined total capital base over earlier AA period 2005–06 to 2009–10 (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10
Opening capital base	1945.3	2016.7	2116.1	2202.9	2246.2
Asset redundancies	2.1	0.0	0.0	0.0	0.0
Net capital expenditure	77.3	112.5	89.0	93.7	110.2
Depreciation	67.4	73.9	80.5	83.6	78.5
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	1953.2	2055.3	2124.6	2213.0	2277.9

- delete Table 8.5 and replace it with the following:

Table 3.16: Roll forward of Wilton to Wollongong trunk pipeline capital base over earlier AA period 2005–06 to 2009–10 (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10
Opening capital base	10.5	8.5	8.6	8.7	8.6
Asset redundancies	2.1	0.0	0.0	0.0	0.0
Net capital expenditure	0.0	0.0	0.0	0.0	0.0
Depreciation	0.2	0.2	0.2	0.2	0.2
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	8.2	8.3	8.4	8.5	8.5

- delete Table 8.6 and replace it with the following:

Table 3.17: Roll forward of Wilton to Newcastle trunk pipeline capital base over earlier AA period (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10
Opening capital base	122.8	124.3	125.4	127.4	126.6
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	0.0	0.0	0.0	0.0	0.5
Depreciation	2.4	2.5	2.5	2.7	2.7
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	120.4	121.8	122.9	124.8	124.4

- delete Table 8.7 and replace it with the following:

Table 3.18: Roll forward of NSW distribution system capital base over the earlier AA period 2005–06 to 2009–10 (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10
Opening capital base	1812.0	1883.9	1982.1	2066.8	2111.0
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	77.3	112.5	89.0	93.7	109.7
Depreciation	64.8	71.3	77.7	80.7	75.6
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	1824.6	1925.1	1993.3	2079.8	2145.1

Amendment 3.3: amend the access arrangement information to:

- delete Table 7.1 and replace it with the following:

Table 3.19: Forecast capital expenditure over the next AA period 2010–11 to 2014–15 (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Total capital expenditure	110.6	114.1	114.0	119.9	117.3	575.9

- delete Table 7.6 and replace it with the following:

Table 3.20: Forecast capital expenditure over next AA period 2010–11 to 2014–15 (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Market expansion	57.0	68.3	73.2	68.8	64.9	332.2
System reinforcement / renewal / replacement	33.2	29.9	27.5	27.9	28.4	146.9
Non-system assets	20.4	15.9	13.3	23.2	24.0	96.8
Total capital expenditure	110.6	114.1	114.0	119.9	117.3	575.9

Amendment 3.4: amend the access arrangement information to:

- delete Table 10.1. and replace it with the following:

Table 3.21: Forecast depreciation over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Total depreciation	88.2	96.7	104.9	112.1	122.0	523.8

- delete Table 10.4 and replace it with the following:

Table 3.22: Forecast depreciation over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Wilton/Wollongong	0.2	0.2	0.2	0.2	0.2	1.1
Wilton/Newcastle	2.7	2.8	2.9	2.9	3.0	14.3
Distribution network	85.2	93.7	101.8	108.9	118.7	508.4
Total	88.2	96.7	104.9	112.1	122.0	523.8

Amendment 3.5: amend the access arrangement information to:

- delete Table 8.8 and replace it with the following:

Table 3.23: Roll forward of combined total capital base over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	2332.8	2409.0	2483.2	2556.6	2634.3
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	106.2	111.1	116.7	126.3	126.5
Depreciation	88.2	96.7	104.9	112.1	122.0
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	2350.9	2423.4	2495.0	2570.8	2638.9

- delete Table 8.9 and replace it with the following:

Table 3.24: Roll forward of Wilton to Wollongong capital base over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	8.7	8.7	8.7	8.7	8.6
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	0.0	0.0	0.0	0.0	0.0
Depreciation	0.2	0.2	0.2	0.2	0.2
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	8.5	8.5	8.4	8.4	8.4

- delete Table 8.10 and replace it with the following:

Table 3.25: Roll forward of Wilton to Newcastle trunk pipeline capital base over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	127.5	128.8	130.0	131.1	132.8
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	0.9	0.8	0.8	1.4	1.4
Depreciation	2.7	2.8	2.9	2.9	3.0
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	125.7	126.8	127.9	129.6	131.1

- delete Table 8.11 and replace it with the following:

Table 3.26: Roll forward of NSW distribution system capital base over next AA period 2010–11 to 2014–15 (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening capital base	2196.7	2271.5	2344.6	2416.9	2492.9
Asset redundancies	0.0	0.0	0.0	0.0	0.0
Net capital expenditure	105.3	110.2	115.9	124.9	125.1
Depreciation	85.2	93.7	101.8	108.9	118.7
Reused redundant assets (end year)	0.0	0.0	0.0	0.0	0.0
Closing capital base	2216.8	2288.1	2358.6	2432.8	2499.3

Amendment 3.6: delete clauses 5(a) and 5(b) in the access arrangement proposal and clause 8.8 in the access arrangement information.

4 Depreciation

4.1 Introduction

This chapter sets out Jemena's submission and the AER's consideration of Jemena's proposed depreciation schedules and asset lives.

Depreciation over the earlier access arrangement period is one of the determinants of the opening capital base. Depreciation over this access arrangement period is reflected in total revenue in two ways. First, it is a component of the projected capital base, and second, as a separate depreciation building block contributing to the revenue requirement.

4.2 Regulatory requirements

Rule 88(1) of the NGR provides that the depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are to be depreciated for the purpose of determining a reference tariff. Rule 88(2) of the NGR provides that the depreciation schedule may consist of a number of separate schedules, each relating to a particular asset or class of assets.

Rule 89(1) of the NGR provides that the depreciation schedule should be designed:

- (a) so that reference tariffs will vary, over time, in a way that promotes efficient growth in the market for reference services; and
- (b) so that each asset or group of assets is depreciated over the economic life of that asset or group of assets; and
- (c) so as to allow, as far as reasonably practicable, for adjustment reflecting changes in the expected economic life of a particular asset, or a particular group of assets; and
- (d) so that (subject to the rules about capital redundancy), an asset is depreciated only once (ie that the amount by which the asset is depreciated over its economic life does not exceed the value of the asset at the time of its inclusion in the capital base (adjusted, if the accounting method approved by the AER permits, for inflation)); and
- (e) so as to allow for the service provider's reasonable needs for cash flow to meet financing, non-capital and other costs.

Rule 89(2) of the NGR provides that compliance with r. 89(1)(a) may involve deferral of a substantial proportion of the depreciation, particularly where:

- (a) the present market for pipeline services is relatively immature; and
- (b) the reference tariffs have been calculated on the assumption of significant market growth; and
- (c) the pipeline has been designed and constructed so as to accommodate future growth in demand.

Clause 5(1)(d) of schedule 1 of the NGR provides that in deciding whether to approve an access arrangement revision proposal for a transitional access arrangement, or in

making its own proposal for revision of a transitional access arrangement under r. 63 or r. 64 of the NGR, the AER must take into account the depreciation schedule for the transitional access arrangement under section 8.32 of the Code.

4.3 Jemena's proposal

Jemena proposes to estimate depreciation by applying a real straight line depreciation method.⁴²⁴ Jemena submits this is consistent with its election to account for inflation by indexing the capital base.⁴²⁵

Table 4.1 sets out Jemena's proposed actual and forecast depreciation for the earlier access arrangement period.

Table 4.1: Jemena's proposed depreciation for the earlier access arrangement period (\$m, nominal)

	2005–06 ^a	2006–07 ^a	2007–08 ^a	2008–09 ^b	2009–10 ^b	Total
Total	103.2	93.7	126.2	99.2	84.6	506.9

Source: Jemena, *Access arrangement information*, August 2009, p. 125.

a: Actual.

b: Forecast.

Table 4.2 sets out Jemena's forecast depreciation for the access arrangement period.

Table 4.2: Jemena's proposed depreciation for the access arrangement period (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Total	89.4	100.2	109.9	120.7	135.8	556.0

Source: Jemena, *Access arrangement information*, August 2009, p. 154.

Table 4.3 sets out Jemena's proposed economic asset lives and remaining lives as at 30 June 2010.

424 Jemena, *Access arrangement information*, August 2009, p. 155.

425 Jemena, *Access arrangement information*, August 2009, p. 155.

Table 4.3: Economic asset lives and remaining lives as at 30 June 2010 (years)

Asset class	Economic life	Remaining life
System assets		
Trunk Wilton–Sydney	80	46.3
Trunk Sydney–Newcastle	80	50.6
Trunk Wilton–Wollongong	80	42.8
Contract Meters	20	9.2
Fixed Plant–Distribution	50	37.5
HP Mains	80	58.7
HP Services	50	26.4
MP Mains	50	29.0
MP Services	50	36.0
Meter Reading Devices	20	19.3
Country POTS	50	35.4
Tariff Meters	20	10.6
Non-system assets		
Building	48	17.5
Computers	5	0
Software	5	2.7
Fixed Plant	10	8.4
Furniture	10	0
Land	0	0
Leasehold Improvements	10	13.3
Low Value Assets	10	0
Mobile Plant	10	6.4
Vehicles	4	4.8

Source: Jemena, *Access arrangement information*, August 2009, pp. 156–157 and Jemena, *Access arrangement information*, attachment: AA10-SR-82103F JGN Regulatory Model- c-i-c (confidential).

Jemena submits that in relation to the depreciation criteria:⁴²⁶

- the real-straight line depreciation profile produces a cost recovery path for new assets that is better aligned to expected market growth than alternatives such as historical cost straight line or declining balance⁴²⁷
- the economic lives in Table 4.3 are the same as those used in the earlier access arrangement period and are consistent with the design lives used by Jemena in engineering evaluations. By maintaining the economic lives used previously, revenue volatility between access arrangement periods is avoided⁴²⁸
- it is not necessary to adjust the economic lives for regulatory purposes in this proposal⁴²⁹
- the real straight line depreciation schedule will result in the value of each asset (with adjustments for inflation through indexation of the capital base) being recovered once over the asset's economic life⁴³⁰
- the cash flows that result from using the real straight line depreciation method are consistent with Jemena's reasonable needs to meet financing, non-capital and other costs, while maintaining a benchmark credit rating of BBB.⁴³¹

Jemena submits that the design of the proposed depreciation schedule does not involve deferring depreciation.⁴³²

Jemena submits that if the AER rejects aspects of the access arrangement proposal in its draft determination, Jemena may propose different asset lives in order to match its cash flow and financing requirements.⁴³³

4.4 Submissions

The AER received two submissions relating to depreciation from the Energy Markets Reform Forum (EMRF) and the Energy Users' Association of Australia (EUAA).

The EMRF submits:

- the technical life of the asset (the point at which the asset can longer be used productively and must be replaced) is often longer than the average time to financially depreciate the asset. The useful life of the asset is also related to other factors such as how it used and maintained. Each of these factors impact on the asset's longevity. However, under the building block approach there is an

426 NGR, r. 89(1).

427 Jemena, *Access arrangement information*, August 2009, p. 155.

428 Jemena, *Access arrangement information*, August 2009, p. 156.

429 Jemena, *Access arrangement information*, August 2009, p. 156.

430 Jemena, *Access arrangement information*, August 2009, p. 156.

431 Jemena, *Access arrangement information*, August 2009, p. 157.

432 Jemena, *Access arrangement information*, August 2009, p. 155.

433 Jemena, *Access arrangement information*, August 2009, p. 154.

incentive for a regulated entity, such as Jemena, to replace an asset before the end of its technical life when the asset is fully depreciated because the asset no longer delivers a return⁴³⁴

- a financial tool should be used to evaluate when it is commercially sensible to replace an asset, rather than using physical asset management alone⁴³⁵
- the AER should ensure that assets are not replaced unnecessarily thus adding unnecessary costs to customers.⁴³⁶

The EUAA submits that the depreciation allowance has significantly decreased relative to the earlier access arrangement period. This could be due to a re-evaluation of the economic lives of Jemena's assets so that the assets can operate longer than previously assumed. If that is the case, it is not clear why the increase in capital expenditure is so large, as a longer economic life of the assets presumably means Jemena would require less renewal or replacement of assets. The AER should investigate this issue further.⁴³⁷

4.5 AER's analysis and considerations

This chapter contains the AER's assessment of Jemena's depreciation schedule. The value of depreciation and the calculation of depreciation for rolling forward the capital base are considered in chapter 3 of the draft decision.

4.5.1 Asset lives

The AER notes the EMRF's submission that Jemena has an incentive to replace assets before the end of their technical lives and that the AER should require Jemena to use a financial tool to evaluate asset replacement. Jemena's proposed asset replacements and renewals program for the access arrangement period is discussed in chapter 3 of the draft decision.

The Wilson Cook report assesses Jemena's asset replacement program. In relation to residential meters, the Wilson Cook report notes that Jemena has now adopted a policy of allowing only one extension of five years to the life of a meter of 15 years, rather than an extension of 10 years as in the earlier access arrangement period. The Wilson Cook report considers that some, but not all, meters will require replacement after 20 years and considers that an asset life of 20 years to 25 years is reasonable. On the basis of the average of a 20-year life and a 25-year life, the Wilson Cook report recommends that Jemena's proposed meter replacement capital expenditure of \$39.4 million be halved.⁴³⁸

434 EMRF, *NSW Gas Distribution Revenue Reset: Jemena Application A response by the Energy Markets Reform Forum*, 9 November 2009, p. 27 (EMRF, *Submission to the AER*, 9 November 2009).

435 EMRF, *Submission to the AER*, 9 November 2009, p. 28.

436 EMRF, *Submission to the AER*, 9 November 2009, p. 28.

437 EUAA, *Submission to the AER on Jemena Gas Networks' Access Arrangement proposal*, 10 November 2009, p. 13 (EUAA, *Submission to the AER*, 10 November 2009).

438 The Wilson Cook report, pp. 59–60.

The AER's consideration of Jemena's proposed capital expenditure is contained in chapter 3 of the draft decision. The AER considers that it has addressed the EMRF's concerns by basing forecast capital expenditure for certain items, such as meter replacement, on historical levels of capital expenditure.

The EUAA submits that the forecast depreciation in the access arrangement period is significantly lower relative to the actual and estimated depreciation in the earlier access arrangement period. The EUAA submits that this may indicate that Jemena has extended the lives of its assets, in which case the high capital expenditure forecast for the access arrangement period may not be justified.

The AER's assessment of Jemena's proposed depreciation values for the earlier access arrangement is contained in chapter 3 of the draft decision. As noted in chapter 3, the AER considers that Jemena's access arrangement proposal overstates the depreciation values by incorrectly inflating both the capital base and depreciation values. Jemena's proposed depreciation values for the earlier access arrangement period total \$506.9 million, whereas the AER considers that the correct total is \$383.8 million. The depreciation values approved by the AER for the earlier access arrangement period are reproduced in Table 4.4 for information purposes only.

Table 4.4: AER's depreciation for the earlier access arrangement period (\$m, nominal)

	2005–06	2006–07	2007–08	2008–09	2009–10	Total
Total	67.4	73.9	80.5	83.6	78.5	383.8

As a consequence of amendments to Jemena's proposed capital expenditure (as assessed in chapter 3 of the draft decision), the remaining asset lives have also changed slightly and so those proposed by Jemena no longer apply. These minor changes to remaining lives are reflected in amendment 4.1.

In addition, the methodology Jemena uses to calculate its remaining lives has inconsistent consequences for some non-system assets with short asset lives. For example, as noted in Table 4.3, the remaining life of motor vehicles (4.8 years) calculated by Jemena is greater than its asset life (4 years). This is contrary to r. 89(1)(b) of the NGR which requires each asset or group of assets to be depreciated over the economic life of that asset or group of assets. Moreover, the design of the depreciation schedule for these non-system assets does not allow, as far as reasonably practicable, for adjustment reflecting the expected economic life of these assets, contrary to r. 89(1)(c). The AER considers that a remaining life of 2 years for motor vehicles is a more reasonable estimate. Accordingly, Jemena is required to make amendment 4.1 set out below.

4.5.2 Depreciation schedule

Rule 88 of the NGR outlines the function of the depreciation schedule and states that the depreciation schedule may consist of one or more schedules for a particular asset or class of assets.

The AER considers that Jemena's depreciation schedule sets out the basis on which the pipeline assets constituting the capital base are depreciated for the purpose of determining a reference tariff.⁴³⁹

The AER notes that as required under r. 88(2) of the NGR, the depreciation schedule consists of (22) separate schedules for different asset classes as outlined in Table 4.3.

Even though Jemena submits that it may propose different assets lives if the AER rejects aspects of its access arrangement proposal, the AER considers that Jemena needs to demonstrate that the changes in economic lives comply with the requirements of r. 89(1)(c) of the NGR.

The AER's assessment of Jemena's proposed depreciation for the access arrangement period is contained in chapter 3 of the draft decision. The depreciation values approved by the AER for the access arrangement period are reproduced in Table 4.5 for information purposes only.

Table 4.5: AER's draft decision for forecast depreciation for the access arrangement period (\$m, nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Depreciation	88.2	96.7	104.9	112.1	122.0	523.8

4.5.3 Depreciation criteria

Rule 89(1) of the NGR outlines the matters relevant to how a depreciation schedule is to be designed. Jemena proposes to depreciate its assets on a real straight line basis over their remaining economic lives.

In general, Jemena uses the same asset classes and asset lives in the access arrangement period as approved by the IPART.⁴⁴⁰

To estimate depreciation for the existing asset classes for the access arrangement period, Jemena uses the proposed remaining asset lives rolled forward from the earlier access arrangement period.⁴⁴¹

The AER has considered the depreciation schedule proposed by Jemena and taken into account clause 5(1)(d) of schedule 1 of the NGR.

The AER has considered the depreciation schedule proposed by Jemena in relation to the criteria set out in r. 89 of the NGR and considers that:

- the straight line method of depreciation is appropriate when demand is forecast to grow relatively consistently over the access arrangement period.⁴⁴² This is

439 NGR, r. 88(1).

440 IPART, *Final decision: Revised access arrangement for AGL gas networks*, April 2005, p. 52 and *Copy of Gas model 5-7 - FINAL DETERMINATION (28 April 2005)_0 (2)* (confidential).

441 Jemena, *Access arrangement information*, August 2009, p. 155–158.

consistent with r. 89(1)(a) of the NGR which requires reference tariffs to vary over time in a way that promotes efficient growth in the market for reference services

- for most assets the design of the depreciation schedule shows that each asset is depreciated over its economic life. However, as discussed earlier, this is not true for certain assets⁴⁴³
- the general design of the depreciation schedule allows for adjustments reflecting changes in the expected economic lives of those assets. However, as discussed earlier, these adjustments are not true for certain assets⁴⁴⁴
- the design of the depreciation schedule shows that each asset is depreciated only once⁴⁴⁵
- the design of the depreciation schedule ensures a positive value for depreciation adding to the positive components of the building block revenue ensuring positive cash flows in the form of revenue. This allows Jemena's reasonable cash flow to be able it to meet financing, non-capital and other costs consistent with the approved levels of capital expenditure.⁴⁴⁶ Any change to the asset lives in order to meet Jemena's reasonable cash flow needs would need to comply with the requirements of r. 89(1)(c) of the NGR and be consistent with approved capital expenditure.

Rule 89(2) of NGR refers to the deferral of depreciation. In this instance the AER does not consider this rule relevant because the present market for pipeline services is relatively mature⁴⁴⁷ and there is no assumption made about significant market growth in the access arrangement period which may affect the calculation of reference tariffs.⁴⁴⁸

4.6 Summary

The AER considers that:

- Jemena sets out the basis on which the pipeline assets constituting the capital base are depreciated for the purpose of determining reference tariffs and the depreciation schedule consists of separate schedules for the classes of assets. This is consistent with the requirements of r. 88 of the NGR.

442 In the period before 2010, the growth trend in demand is broadly constant and linear, consistent with the conclusion drawn above. This is based on an analysis of longer term trends of the Jemena demand profile, including 14 years of demand data (forecast and actual). Information which forms the basis of this analysis was sourced from Jemena, *Access arrangement information*, August 2009, pp. 43, 56, 59 and Jemena, *Access Arrangement information*, August 2009, appendix 5.2: NIEIR, *Natural gas projections NSW Jemena Gas Networks to 2019*, 26 August 2009, p. 49.

443 NGR, r. 89(1)(b).

444 NGR, r. 89(1)(c).

445 NGR, r. 89(1)(d).

446 NGR, r. 89(1)(e).

447 NGR, r. 89(2)(a).

448 NGR, r. 89(2)(b).

- As a consequence of the minor changes to the remaining asset lives, Jemena's proposed depreciation schedule is not designed so that certain assets are depreciated over the economic lives of those assets and so does not comply with r. 89(1)(b) of the NGR.
- Similarly, Jemena's proposed depreciation schedule does not accurately reflect changes in the expected economic lives of certain assets and so does not comply with r. 89(1)(c) of the NGR.

4.7 Conclusion

The AER does not propose to approve the depreciation schedule proposed by Jemena for the access arrangement period as it does not comply with r. 89(1)(c) of the NGR. In addition to the amendments to Jemena's estimate of depreciation for total revenue as required by amendment 3.6 of the draft decision, the AER also requires Jemena to make amendments 4.1 and 4.2 set out below.

4.8 Amendments required to the access arrangement proposal

Before the proposed revised access arrangement can be approved, Jemena must make the following amendments:

Amendment 4.1: amend the access arrangement information to delete Table 10.2 in the access arrangement information and replace it with the following:

Asset Category	Economic life (years)	Remaining life (years)
System assets		
Trunk Wilton–Sydney	80	45.0
Trunk Sydney–Newcastle	80	49.1
Trunk Wilton–Wollongong	80	41.7
Contract Meters	20	8.9
Fixed Plant –Distribution	50	37.0
HP Mains	80	57.2
HP Services	50	25.5
MP Mains	50	28.1
MP Services	50	34.9
Meter Reading Devices	20	19.0
Country POTS	50	34.7
Tariff Meters	20	10.3
Non-system assets		
Building	48	20.9
Computers	5	0.0
Software	5	3.3
Fixed Plant	10	9.0
Furniture	10	0.0
Land	–	0.0
Leasehold Improvements	10	8.0
Low Value Assets	10	0.0
Mobile Plant	10	5.1
Vehicles	4	2.0

Amendment 4.2: amend the access arrangement information to replace the column headed ‘Remaining Asset Life’ of Table 10.3 with the following:

	Remaining asset life (years)
Trunk pipeline (Wilton–Sydney)	45.0
Trunk Pipeline (Sydney–Newcastle)	49.1
Trunk pipeline (Wilton–Wollongong)	41.7
Distribution system	
County POTS	34.7
Contract meters	8.9
Tariff meters	10.3
Meter reading devices	19.0
Fixed plant	37.0
HP mains	57.2
MP mains	28.1
HP Services	25.5
MP services	34.9

5 Rate of return

5.1 Introduction

This chapter sets out the AER's estimate of an efficient (market based) benchmark rate of return on capital for Jemena over the access arrangement period. The key issues considered include the selection of an approach to calculate the rate of return on capital, selection of a well accepted financial model, and the determination of relevant parameters—including the risk-free rate, equity beta, market risk premium, gearing ratio, debt risk premium and inflation forecast.

The AER's consideration of the approach to taxation, including the value of imputation credits (γ), is considered in chapter 6.

5.2 Regulatory requirements

Rule 72(1)(g) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the proposed rate of return, the assumptions on which the rate of return is calculated and a demonstration of how it is calculated.

Rule 73(3) of the NGR requires all financial information to be provided and all calculations made, consistently on the same basis.

Rule 74(1) of the NGR requires that any forecast or estimate included in the access arrangement information should be supported by a statement of the basis of that forecast or estimate. Rule 74(2) of the NGR provides that a forecast or estimate:

- (a) must be arrived at on a reasonable basis; and
- (b) must represent the best forecast or estimate possible in the circumstances.

Rule 87(1) of the NGR provides that the rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. Rule 87(2) of the NGR provides that in determining a rate of return on capital:

- (a) it will be assumed that the service provider:
 - (i) meets benchmark levels of efficiency; and
 - (ii) uses a financing structure that meets benchmark standards as to gearing and other financial parameters for a going concern and reflects in other respects best practice; and
- (b) a well accepted approach that incorporates the cost of equity and debt, such as the Weighted Average Cost of Capital, is to be used; and a well accepted financial model, such as the Capital Asset Pricing Model, is to be used.

5.3 Summary of Jemena's proposal

Jemena proposes the use of a pre-taxation nominal weighted average cost of capital (WACC).⁴⁴⁹ It proposes using the Fama–French three-factor model (FFM), with parameters derived from Australian data, to establish the return on equity.⁴⁵⁰ Jemena submits that using the FFM to estimate the cost of equity provides an estimate that better reflects the prevailing conditions in the market for funds than the alternative Sharpe–Lintner capital asset pricing model (CAPM).⁴⁵¹

The pre-taxation nominal WACC for Jemena's access arrangement proposal is calculated to be 12.63 per cent. The parameters for the WACC are presented in Table 5.1.

449 Following the nomenclature of N. Hathaway, *Imputation WACCs: Descriptions and numerical valuation comparison*, November 2004, viewed 30 November 2009, <http://www.capitalresearch.com.au/downloads/WACC_descript.pdf>.

450 Jemena, *Access arrangement information*, August 2009, pp. 135–151.

451 Jemena, *Access arrangement information*, August 2009, p. 135.

Table 5.1: Jemena's proposed WACC parameters

Parameter	Jemena's proposal
Nominal risk-free rate (%)	5.60
Inflation (%)	2.38
Real risk-free rate (%)	3.15
Equity beta ^a	N/A
Market beta ^b	0.59
Growth beta ^b	0.48
Size beta ^b	0.30
Market risk premium ^c (%)	6.50
Growth risk premium ^c (%)	6.24
Size risk premium ^c (%)	-1.23
Debt risk premium (%)	5.04
Debt to total assets (gearing) (%)	60
Pre-taxation nominal WACC (%)	12.63
Nominal return on equity (%)	12.06
Nominal return on debt (%)	10.64
Nominal vanilla WACC (%)	11.21
Gamma (utilisation of imputation credits)	0.20

Source: Jemena, *Access arrangement information*, August 2009, p. 147.

a: Equity beta is used in the CAPM but not used in the FFM.

b: The FFM uses three beta values (market beta, growth beta and size beta) to predict equity returns.

c: The FFM uses a market risk premium (MRP), a growth risk premium for high book-to-market firms, and a size risk premium for small firms compared to large firms.

5.4 Weighted average cost of capital

Jemena proposes using a nominal pre-taxation WACC as follows:⁴⁵²

$$WACC^n = \frac{R_e^n}{1 - T_e(1 - \gamma)} \frac{E}{V} + R_d^n \frac{D}{V},$$

452 Jemena, *Access arrangement information*, August 2009, p. 140.

where:

R_e^n is the nominal return on equity

R_d^n is the nominal return on debt

E is the level of equity

D is the level of debt

V is $(D + E)$, i.e. debt plus equity

γ is the level of imputation utilisation

T_e is the effective taxation rate on equity.

This form of WACC involves calculating a pre-taxation cost of debt and equity.⁴⁵³ Under Jemena's proposed pre-taxation framework, the value of imputation credits is also incorporated in calculating the effective taxation rate used to determine the pre-taxation return on capital.⁴⁵⁴

As discussed in chapter 6, the AER considers that the post-taxation framework is more appropriate for Jemena's access arrangement. Therefore, the AER estimates the rate of return using a nominal vanilla WACC:⁴⁵⁵

$$WACC = R_d^n \times \frac{D}{V} + R_e^n \times \frac{E}{V}$$

where:

R_d^n is the nominal return on debt

R_e^n is the nominal return on equity

D is total debt

E is total equity

V is $(D + E)$, i.e. total debt plus total equity.

This approach to the WACC involves the calculation of a pre-company-taxation cost of debt and a post-company-taxation, but pre-personal-taxation cost of equity.⁴⁵⁶ The

453 R. Officer, 'The cost of capital of a company under an imputation tax system', *Accounting and Finance*, 1994, vol. 34, pp. 1–17 (Officer, 'Cost of capital under imputation', *Accounting and Finance*, 1994) cited in Jemena, *Access arrangement information*, August 2009, p. 140.

454 Jemena, *Access arrangement information*, August 2009, p. 138.

455 N. Hathaway, *Imputation WACCs: Descriptions and Numerical Valuation Comparisons*, 2004, viewed 8 December 2009, <http://www.capitalresearch.com.au/downloads/WACC_descript.pdf>.

AER considers that this approach reflects the appropriate basis on which the cost of capital is determined, in accordance with benchmark levels of efficiency as required by r. 87 of the NGR and the presentation of taxation in accordance with the requirements of r. 74(2) of the NGR.

The AER notes that this requires consistent cash flow definitions and explicit cash flow estimates for:

- the debt shield, i.e. the reduction in tax payments as a result of interest payments
- the imputation effects, i.e. prepayment of personal taxes at the business level
- taxation as a separate ‘building block’.⁴⁵⁷

For clarity, gamma does not directly appear in the nominal vanilla WACC but is used in the estimation of taxation in the post-taxation revenue model (PTRM). As a consequence, gamma is discussed in chapter 6 of the draft decision along with other matters in relation to taxation.

Rule 87(2)(b) of the NGR refers to the WACC as an example of a ‘well accepted approach’ that incorporates the cost of equity and debt to determine the rate of return on capital.

5.4.1 Cost of equity

Jemena proposes using the FFM to establish the return on equity as follows:

$$R_e^n = R_f^n + MRP^n \times \beta_m + SMB^n \times \beta_{SMB} + HML^n \times \beta_{HML}$$

where:

R_e^n is the nominal return on equity

R_f^n is the nominal risk-free rate

MRP^n is the market risk premium

SMB^n is the risk premium for small firms compared to big firms

HML^n is the risk premium for high book-to-market firms compared to low book-to-market firms

β_m is the market beta

456 Further detail on this implementation of WACC (and its relationship to other specifications of the WACC formula relevant in a tax imputation environment) is contained in Officer, ‘Cost of capital under imputation’, *Accounting and Finance*, 1994.

457 Officer, ‘Cost of capital under imputation’, *Accounting and Finance*, 1994, pp. 6–8.

β_{SMB} is the beta on the small minus big firm factor

β_{HML} is the beta on the high minus low firm factor.⁴⁵⁸

For the reasons set out in section 5.5, the AER establishes the return on equity using the Sharpe–Lintner CAPM:

$$R_e^n = R_f^n + MRP^n \times \beta_e$$

where:

R_e^n is the nominal return on equity

R_f^n is the nominal risk free rate

MRP^n is the market risk premium, i.e. ($R_m - R_f$) where R_m is the return on the market portfolio

β_e is the equity beta of the benchmark business.

The NGR refer to the CAPM as an example of a ‘well accepted financial model’ of the type to be used to determine the rate of return on capital.⁴⁵⁹ As outlined in section 5.5.3 the AER considers that the CAPM is a well accepted model that takes into account the expected return of an individual entity and the level of systematic (i.e. non-diversifiable) risk faced by that entity in accordance with r. 87 of the NGR.

5.4.2 Cost of debt

Jemena’s proposal for estimating the cost of debt is consistent with that adopted by the AER in previous decisions:

$$R_d^n = R_f^n + DRP^n$$

where:

R_d^n is the nominal return on debt

R_f^n is the nominal risk-free rate

DRP^n is the nominal debt risk premium.⁴⁶⁰

458 Jemena, *Access arrangement information*, August 2009, p. 141.

459 NGR, r. 87(2)(b).

460 Jemena, *Access arrangement information*, August 2009, p. 145 and AER, *Final decision, New South Wales distribution determination 2009–10 to 2013–14*, 28 April 2009.

The debt risk premium is the difference between the risk-free rate and the corporate bond rate. Accepted regulatory practice assumes the benchmark corporate bond has a term to maturity equal to that used to derive the nominal risk-free rate and an appropriate credit rating from a recognised credit rating agency.⁴⁶¹ The AER considers that this approach produces the best estimate of the cost of debt that is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services, as required by r. 87(1) of the NGR.

5.5 Fama–French three-factor model

According to the CAPM, the well diversified investor requires a return to compensate it for exposure to systematic market-wide risks. The cost of equity is therefore the market risk premium (MRP)—the average market return in excess of the risk free rate—multiplied by the firm’s equity beta—the covariance of that firm’s return with the market return. All other business specific risks are diversified away and therefore do not require compensation.⁴⁶²

In contrast, the FFM identifies three sources of undiversifiable risk:⁴⁶³

- the MRP (similar to the CAPM)
- the value or growth risk premium, high minus low (HML)—the premium earned by high minus low value shares:
 - high value firms have high $\frac{\text{book value of equity}}{\text{market value of equity}}$
 - low value firms (also named growth shares) have low $\frac{\text{book value of equity}}{\text{market value of equity}}$
- the size risk premium, small minus big (SMB)—the premium earned by small minus big shares
 - small firms have small total capitalisation (equity at market value)
 - big firms have big total capitalisation (equity at market value).

The FFM states that small firms and firms with a high book-to-market ratio require additional returns to compensate investors for these additional risks. Accordingly,

461 AER, *Final decision: WACC review*, 1 May 2009, pp. 345–392.

462 W. Sharpe, ‘Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk’, *Journal of Finance*, 1964, vol. 19, pp. 425–442 (Sharpe, ‘Capital Asset Prices’, *Journal of Finance*, 1964) and J. Lintner, ‘The Valuation of Risky Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets’, *The Review of Economics and Statistics*, 1965, vol. 47, pp. 13–37.

463 Jemena, *Access arrangement information*, August 2009, pp. 142–143. Source papers are E. Fama, and K. French, ‘The cross-section of expected stock returns’, *Journal of Finance*, June 1992, vol. 47(2), pp. 427–465 (Fama and French, ‘Cross-section of stock returns’, *Journal of Finance*, 1992) and E. Fama and K. French, ‘Common risk factors in the returns on stocks and bonds’, *Journal of Financial Economics*, 1993, vol. 33(1), pp. 3–56 (Fama and French, ‘Common risk factors’, *Journal of Financial Economics*, 1993).

large firms and firms with a low book-to-market ratio have less risk and investors require a lower rate of return.

The return that must be offered to an investor to convince it to invest in a particular share will reflect the exposure of that share to each of these three risk sources. Therefore, the FFM has three beta-like coefficients, determined by multivariate regression of the observed return on MRP, HML and SMB.

5.5.1 Jemena's proposal

The form of the FFM proposed by Jemena is set out at section 5.4.1 of this chapter.

Based on a report by NERA Economic Consulting (the NERA report on the FFM),⁴⁶⁴ Jemena proposes the parameters set at in Table 5.2.

Table 5.2: Jemena's proposed Fama–French parameters

Parameter	Market	HML	SMB
Risk premium (per cent)	6.50	6.24	–1.23
Beta	0.59	0.48	0.30

Source: Jemena, *Access arrangement information*, August 2009, p. 144.

Using the values in Table 5.2 to estimate the cost of equity under the FFM, the calculated rate of return is 6.46 percentage points above the risk-free rate. For Jemena's proposal, the indicative risk-free rate is 5.60 per cent, so the proposed cost of equity is 12.06 per cent.⁴⁶⁵

The NERA report on the FFM states that this model is a well accepted financial model as required by r. 87 of the NGR.⁴⁶⁶

The NERA report on the FFM defines well accepted by reference to a cross-section of academics, financial market practitioners and regulators. The NERA report on the FFM states that a well accepted model is one which is supported by the weight of opinion of academics, financial market practitioners and regulators.⁴⁶⁷

Jemena's access arrangement proposal summarises the NERA report on the FFM's findings that the FFM is well accepted because:⁴⁶⁸

- academic literature provides wide support for the FFM as a reliable predictor of equity returns

464 NERA, *Cost of equity: Fama–French three-factor model: Jemena Gas Networks (NSW)*, 12 August 2009 (NERA, *Fama–French model*, 12 August 2009), included as attachment 9.1 to Jemena's access arrangement information.

465 Jemena, *Access arrangement information*, August 2009, pp. 144, 149.

466 Jemena, *Access arrangement information*, August 2009, pp. 141, 144.

467 NERA, *Fama–French model*, 12 August 2009, p. 28.

468 Jemena, *Access arrangement information*, August 2009, p. 143.

- a sizeable proportion of United States (US) managers apply multifactor risk models for investment decision making, with a significant subset using size and value factors
- Australian investment portfolios are more consistent with the predictions of the FFM than with the predictions of the CAPM because not all investors hold the same portfolio of assets.

In addition, the NERA report on the FFM submits the following:⁴⁶⁹

- a paper by Fama and French on the FFM (the 1993 Fama–French paper) is cited more often than a paper by Sharpe on the CAPM (the 1964 Sharpe paper) in the *Journal of Finance* in 2007⁴⁷⁰
- an Australian survey shows no use of the FFM by finance managers, but this may be because factor loadings are not available for this market
- the New Zealand Commerce Commission has recently released revised draft guidelines on its approach to estimating the cost of capital, which refer to the possible use of the FFM as a cross-check for the cost of equity determined by the CAPM.

Based on this information, Jemena submits that the FFM is a well accepted model.

Jemena’s access arrangement proposal further outlines that the FFM provides a best estimate that is more accurate than CAPM and which is determined on a reasonable basis, in accordance with r. 74 of the NGR.⁴⁷¹ This is because the FFM takes account of the relationships between the size premium, value premium and share returns, and there is empirical evidence supporting these relationships from major capital markets including the US, Europe, the United Kingdom (UK) and Japan. In addition, supporting evidence can also be found in Australia for the FFM value premium (that is, the relationship between the book-to-market ratio and return), although it is less clear that the size factor is priced in Australia.⁴⁷²

The NERA report on the FFM notes that how well a model can predict outcomes can also be used to demonstrate whether a model provides a best estimate. The factors the NERA report on the FFM considers are:⁴⁷³

- the identification of additional sources of systematic (non-diversifiable) risk
- the explanation of the cross-section of historical share returns
- the prediction of required returns on share portfolios.

469 NERA, *Fama–French model*, 12 August 2009, pp. 27–35.

470 Source papers are Fama and French, ‘Common risk factors’, *Journal of Financial Economics*, 1993 and Sharpe, ‘Capital Asset Prices’, *Journal of Finance*, 1964.

471 Jemena, *Access arrangement information*, August 2009, pp. 141, 144.

472 Jemena, *Access arrangement information*, August 2009, p. 143.

473 NERA, *Fama–French model*, 12 August 2009, pp. 22–26.

The NERA report on the FFM includes a specific analysis of the share market returns for 21 US gas and electricity companies between 1980 and 2009. This analysis compares the FFM and CAPM estimates against the observed returns. The NERA report on the FFM concludes that the CAPM underestimates the returns on US regulated gas and electricity companies and it should not be used to determine the rate of return for these utilities. Further, the NERA report on the FFM concludes that the FFM is a better predictor of the returns required on a portfolio of US gas and electricity utilities than the CAPM.⁴⁷⁴

5.5.2 Submissions

The AER received submissions on Jemena's proposal to use the FFM, rather than the standard Sharpe–Lintner CAPM, for estimating the return on equity from:

- the Australian Pipeline Industry Association Ltd (APIA)⁴⁷⁵
- the Financial Investor Group (FIG)⁴⁷⁶
- the Energy Networks Association (ENA)⁴⁷⁷
- the Energy Users Association of Australia (EUAA)⁴⁷⁸
- the Energy Markets Reform Forum (EMRF).⁴⁷⁹

The APIA submits that the FFM meets the requirements of the NGL and NGR and should be available for use by gas infrastructure companies.⁴⁸⁰ However, the APIA's support is qualified—it recognises that there may be issues in regard to sourcing data when using the FFM.⁴⁸¹

The FIG submits that models other than the CAPM—such as the Black CAPM, the zero–beta Fama–French two–factor model, and the FFM proposed by Jemena—meet the requirements of the NGR. The FIG submits that since the FFM is as valid as the CAPM, the AER should give serious consideration regarding its use to set the rate of return on equity.⁴⁸² The FIG notes that the estimation of CAPM parameters is inherently backward looking, rather than forward looking.⁴⁸³ The FIG considers that

474 NERA, *Fama–French model*, 12 August 2009, p. 26.

475 APIA, *Submission on Jemena Gas Networks Proposed Revised Access Arrangement*, 9 November 2009 (APIA, *Submission to the AER*, 9 November 2009).

476 FIG, *Submission to the AER on the New South Wales Gas Access Arrangement Review 2010–2015*, 9 November 2009 (FIG, *Submission to the AER*, 9 November 2009).

477 ENA, *Submission to the AER on the New South Wales Gas Access Arrangement Review 2010–2015*, 13 November 2009 (ENA *Submission to the AER*, 13 November 2009).

478 EUAA, *Submission to the AER on Jemena Gas Networks' Access Arrangement proposal 2010/11–2014/15*, 10 November 2009 (EUAA, *Submission to the AER*, 10 November 2009).

479 EMRF, *NSW Gas Distribution Revenue Reset, Jemena Application: A response by the Energy Markets Reform Forum*, 9 November 2009 (EMRF, *Submission to the AER*, 9 November 2009).

480 APIA, *Submission to the AER*, 9 November 2009, pp. 1–5.

481 APIA, *Submission to the AER*, 9 November 2009, p. 4.

482 FIG, *Submission to the AER*, 9 November 2009, p. 3.

483 FIG, *Submission to the AER*, 9 November 2009, p. 2.

the AER should examine a variety of capital pricing models, establish a range of possible outcomes, and then select a point estimate towards the upper end of this range.⁴⁸⁴

The ENA submits that the FFM appears to be relevant in an Australian context and could potentially be superior to the CAPM because it is well accepted in academic literature, and variants of the FFM are used by US managers in making investment decisions. The FFM is also recommended by an international expert panel to the New Zealand Commerce Commission as a means to check returns on equity for regulated businesses.⁴⁸⁵

The EUAA submission does not support the use of the FFM.⁴⁸⁶ The EUAA submits that the AER should use the CAPM to determine the rate of return on equity as this is a well accepted methodology. The EUAA notes that changing from the CAPM to the FFM would provide a 25 per cent increase in the WACC compared to the earlier access arrangement. The EUAA considers that this is a significant increase but it is difficult to determine exactly which component of the FFM is responsible for the higher cost of capital.⁴⁸⁷

The EMRF submission does not support the use of the FFM. The EMRF submits that the FFM includes additional elements for equity return over the CAPM, which provides Jemena with an increase in the WACC.⁴⁸⁸ The EMRF states that even though NERA outlines that the FFM is a well accepted financial model, it is not used by any Australian regulators or a majority of Australian businesses.⁴⁸⁹ The EMRF submits that support for the FFM is not universal, but the CAPM—despite its limitations, as acknowledged by NERA—is widely accepted.⁴⁹⁰ Further, the EMRF submits that there are data limitations in deriving the two additional risk premiums (SMB and HML), as well as the two additional betas, particularly given the available time series of data of only eight years.⁴⁹¹

Jemena also submits a letter (with an accompanying consultant's report) on the AER's draft decision for ActewAGL's access arrangement proposal for the ACT, Queanbeyan and Palerang gas distribution network which it seeks to have considered for the Jemena draft decision.⁴⁹² Although not a submission on the Jemena proposal, the content is relevant to the evaluation of the FFM and is therefore considered by the

484 FIG, *Submission to the AER*, 9 November 2009, p. 3.

485 ENA, *Submission to the AER*, 13 November 2009, pp. 1–2.

486 EUAA, *Submission to the AER*, 10 November 2009, section 4.3–4.6.

487 EUAA, *Submission to the AER*, 10 November 2009, section 4.5.

488 EMRF, *Submission to the AER*, 9 November 2009, p. 50.

489 EMRF, *Submission to the AER*, 9 November 2009, p. 51.

490 EMRF, *Submission to the AER*, 9 November 2009, p. 52.

491 EMRF, *Submission to the AER*, 9 November 2009, p. 53.

492 Jemena, *Jemena Gas Networks – Submission on ActewAGL draft decision*, 22 December 2009 (Jemena, *Submission on ActewAGL decision*, 22 December 2009). Attached report was NERA Economic Consulting, *Review of Da, Guo and Jagannathan empirical evidence on the CAPM: A report for Jemena Gas Networks*, 21 December 2009 (NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009). Source paper is Z. Da, R. Guo and R. Jagannathan, 'CAPM for estimating the cost of equity capital: interpreting the empirical evidence', *NBER working paper series*, 2009, paper number 14889 (Da, Guo and Jagannathan, 'CAPM: Interpreting the evidence', 2009, *NBER working paper 14889*).

AER as part of this draft decision.⁴⁹³ This submission (including an accompanying consultant's report) is discussed where relevant in section 5.5.3 and considered in detail in appendix A.

5.5.3 AER's analysis and considerations

Regulatory framework

The AER notes that r. 87 of the NGR sets out the following factors to which regard must be had when establishing the rate of return on capital:

- *Well accepted*—the standard CAPM is recognised as a well accepted financial model under the NGR,⁴⁹⁴ and is the only model accepted for use under the National Electricity Law and National Electricity Rules.⁴⁹⁵
- *Prevailing conditions in the market for funds*—the market is the Australian domestic equity market.⁴⁹⁶
- *Benchmark levels of efficiency*—the return on capital is a benchmark return, not the return on capital for the specific circumstances of the service provider. As outlined in the AER's review of weighted average cost of capital (WACC) parameters (the WACC review),⁴⁹⁷ the benchmark levels of efficiency are determined in relation to a notional benchmark service provider.⁴⁹⁸

The AER considers that the rate of return determined using benchmark levels of efficiency in r. 87 of the NGR will be based on forecasts and estimates that meet the requirements of r. 74(2) of the NGR:

- *Arrived at on a reasonable basis*—the model used must provide for a statistically valid model that can be estimated from available Australian data to produce a reliable empirical estimate. As part of the assessment of whether a model provides an estimate on a reasonable basis, the theoretical underpinnings and conceptual basis for the model may need to be considered.⁴⁹⁹

493 This consideration occurred to the extent possible given the time available. Submissions on the Jemena proposal closed on 10 November 2009, but this letter from Jemena (and accompanying report) was not received until the 22 December 2009.

494 NGR, r. 87(2)(b).

495 NER, rr. 6.5.2 and 6A.6.2.

496 NGR, r. 87(1).

497 AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009 (AER, *Final decision: WACC review*, 1 May 2009).

498 AER, *Final decision: WACC review*, 1 May 2009, pp. 77–82, 101–110. The benchmark efficient network service provider is defined as a 'pure-play' regulated network business operating within Australia without parent ownership.

499 NGR, r. 74(2)(a).

- *Best estimate or forecast possible in the circumstances*—the model must produce a better forecast and estimates of the expected rate of return than alternative models or approaches in the circumstances.⁵⁰⁰

The following sections assess the FFM (as proposed by Jemena and its consultant, NERA) with reference to whether the proposal represents a well accepted model and if this proposed model is consistent with benchmark levels of efficiency as required by r. 87 of the NGR. Also important is the prevailing conditions in the market for funds and the risks involved in providing reference services.⁵⁰¹ However, the AER considers that the relevant market for funds and the risks involved in providing services—and indeed the benchmark levels of efficiency—were considered at length in the WACC review, and other recent electricity and gas decisions so are not considered in detail below.⁵⁰²

Well accepted model

A key consideration under r. 87 of the NGR is whether the FFM proposed by Jemena—based on the analysis in the NERA report on the FFM—can be considered a well accepted financial model. The NERA report provides detailed arguments as to why the FFM can be considered a well accepted model in accordance with r. 87(2) of the NGR.⁵⁰³ The NERA report on the FFM also submits that the FFM provides a best estimate arrived at on a reasonable basis, in accordance with r. 74 of the NGR.⁵⁰⁴

In order to establish that the FFM is a well accepted model, the framework proposed by the NERA report on the FFM to consider this issue centres on who uses the FFM. As outlined above, the NERA report on the FFM states that the relevant participant classes are academic literature, financial market practitioners and regulators.⁵⁰⁵ The AER considers that an equally important issue is what these classes use the FFM for. For example, the purpose for which a model such as the FFM may be used by one academic paper (for example, explaining the cross section of past share returns in Japan) may be very different to the purpose of the FFM in another piece of academic literature (for example, predicting future share returns in Australia). As outlined above the relevant context for considering the FFM is the use of the CAPM by regulators in assessing the rate of return on equity within the relevant regulatory framework. For the AER, the relevant regulatory framework seeks to establish a

500 NGR, r. 74(2)(b).

501 NGR, r. 87(1).

502 AER, *Final Decision: WACC review*, 1 May 2009, p. 99–101, 104–110, 423–426; AER, *Final decision: Australian Capital Territory distribution determination 2009–10 to 2013–14*, 28 April 2009, pp. 214–270 (AER, *Final decision: Australian Capital Territory distribution determination* April 2009); AER, *Final decision, New South Wales distribution determination 2009–10 to 2013–14*, 28 April 2009, pp. 80, 180–185, 218–222 (AER, *Final decision, New South Wales distribution determination* April 2009); AER, *Draft decision, ActewAGL distribution access arrangement proposal 1 July 2010 – 30 June 2015*, November 2009, pp. 57, 70 (AER, *Draft decision: ActewAGL distribution access arrangement proposal*, November 2009), and AER, *Draft decision, Country Energy Access arrangement proposal 1 July 2010 – 30 June 2015*, November 2009, pp. 42, 52 (AER, *Draft decision: Country Energy access arrangement proposal*, November 2009).

503 NERA, *Fama–French model*, 12 August 2009, pp. 22–26 (section 4.1), 35 (section 4.3).

504 NERA, *Fama–French model*, 12 August 2009, pp. 27–35 (section 4.2).

505 NERA, *Fama–French model*, 12 August 2009, pp. 27–28.

benchmark rate of return, in the Australian market.⁵⁰⁶ Consistent with the national gas objective under s. 23 of the NGL, the benchmark rate of return seeks to provide the service provider with an adequate return for its investment and provide appropriate incentives for efficient investment while balancing the long-term interests of users.

In view of the above context, the AER considers that the analysis of the three participant classes—academic literature, finance market practitioners and regulators—in the NERA report on the FFM has limitations.⁵⁰⁷ This is because the NERA report on the FFM, which considers who uses the FFM, fails to take account of what the model is used for. The AER considers that this is critical because the AER’s analysis of the rate of return is limited by the NGR to benchmark returns on assets included in the capital base, but the FFM may be used for other purposes.

Academic literature

Jemena submits that the FFM has gained wide acceptance in the academic literature, but does not list any specific examples.⁵⁰⁸ The NERA report on the FFM states that there is a ‘significant body of academic literature’ that supports the FFM.⁵⁰⁹ While the NERA report on the FFM cites certain references as outlined below, this report does not include references to the academic literature to support the statement. The NERA report on the FFM cites:

- the 1992 and 1993 papers by Fama and French that identify the existence of value and size premiums⁵¹⁰
- a paper by Gaunt (and a conference presentation by O’Brien, Brailsford and Gaunt) that presents Australian evidence for Fama–French factors, concluding that it is a better explanation than the CAPM for observed Australian share market outcomes⁵¹¹
- a paper by Davis, Fama and French that finds results consistent with the FFM in samples outside of the sample used in the original analysis⁵¹²

506 The AER notes that r. 87(1) of the NGR states that the rate of return on capital is to be commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services. Further, r. 87(2) of the NGR states that the rate of return should be set on the assumption that the service provider meets benchmark levels of efficiency.

507 NERA, *Fama–French model*, 12 August 2009, p. 28.

508 NERA, *Fama–French model*, 12 August 2009, p. 28 (section 4.2.2).

509 NERA, *Fama–French model*, 12 August 2009, p. 28.

510 NERA, *Fama–French model*, 12 August 2009, pp. 10, 11, 13, 14, 15 and 16 (footnotes 14, 17, 19, 22, and 27). Source papers are Fama and French, ‘Cross-section of stock returns’, *Journal of Finance*, 1992 and Fama and French, ‘Common risk factors’, *Journal of Financial Economics*, 1993.

511 NERA, *Fama–French model*, 12 August 2009, pp. 11, 16 (footnote 32). Source papers are C. Gaunt, ‘Size and book to market effects and the Fama French three factor asset pricing model: Evidence from the Australian stockmarket’, *Accounting and Finance*, 2004, vol. 44, pp. 27–44 (Gaunt, ‘Fama–French model: Australian evidence’, *Accounting and Finance*, 2004) and M. O’Brien, T. Brailsford, and C. Gaunt, ‘Size and book-to-market factors in Australia’, *Presentation to the 21st Australasian Finance and Banking Conference*, 2008 (O’Brien, Brailsford, and Gaunt, ‘Market factors in Australia’, *Australasian Finance and Banking Conference*, 2008).

512 NERA, *Fama–French model*, 12 August 2009, p. 22 (footnote 50). Source paper is J. Davis, E. Fama, and K. French, ‘Characteristics, covariances, and average returns: 1929 to 1997’, *Journal of Finance*, February

- a paper by Chan, Hamao and Lakonishok that finds results consistent with the FFM in Japan.⁵¹³

The AER considers that five academic papers (and one conference presentation) do not constitute a significant body of evidence. The NERA report on the FFM does not provide an explanation of how these six academic references were selected, or a justification of why they represent the opinion of a sufficient cross-section of the academic literature participant class. The AER observes that although Jemena's access arrangement proposal (and the NERA report on the FFM) states that evidence supporting the FFM has been found in capital markets in Europe and the UK,⁵¹⁴ no academic papers are referenced that present evidence from these markets.

The AER acknowledges the submissions on this issue from the FIG and the ENA, which state that the FFM has broad support in the academic literature.⁵¹⁵ In contrast, the EMRF submission states that there is an opposing body of evidence which does not support the FFM.⁵¹⁶ However, the AER notes that none of these submissions cite any specific papers which the AER can take into consideration in the draft decision.

In contrast, the AER includes a discussion of specific academic papers about the FFM later in this section. As outlined later the AER does not find there to be a significant body of evidence in support of the FFM.

The NERA report on the FFM states that the FFM is more widely used as a benchmark by academics than the CAPM. To support this, the NERA report on the FFM outlines that the 1993 Fama–French paper setting out the FFM was cited twelve times in the *Journal of Finance* in 2007, whereas the 1964 Sharpe paper which laid the foundations of the CAPM was cited just once.⁵¹⁷

Without considering whether the number of citations constitutes an appropriate quantitative basis for determining what a well accepted model is, the AER considers that the analysis in the NERA report on the FFM is selective.⁵¹⁸ Another clear limitation of this approach is that the FFM was only developed in 1993, whereas the Sharpe CAPM was developed in 1964. Therefore, the Sharpe CAPM has almost 30 years head start on the number of citations in academic journals compared with the FFM.

2000, vol. 60(1), pp. 389–406 (Davis, Fama and French, 'Average returns: 1929 to 1997', *Journal of Finance*, 2000).

513 NERA, *Fama–French model*, 12 August 2009, p. 22 (footnote 51). Source paper is L. Chan, Y. Hamao, and J. Lakonishok, 'Fundamentals and stock returns in Japan', *Journal of Finance*, December 1991, vol. 46(5), pp. 1739–1764 (Chan, Hamao and Lakonishok, 'Stock returns in Japan', *Journal of Finance*, 1991).

514 Jemena, *Access arrangement information*, August 2009, p. 143 and NERA, *Fama–French model*, 12 August 2009, p. 22.

515 ENA, *Submission to the AER*, 13 November 2009, p. 2 and FIG, *Submission to the AER*, 9 November 2009, p. 2.

516 EMRF, *Submission to the AER*, 9 November 2009, p. 52.

517 NERA, *Fama–French model*, 12 August 2009, p. 29. The source papers are Fama and French, 'Common risk factors', *Journal of Financial Economics*, 1993 and Sharpe, 'Capital Asset Prices', *Journal of Finance*, 1964.

518 Specifically, it is limited to the *Journal of Finance*, to the year 2007, and to two specific source papers (the 1964 Sharpe paper and the 1993 Fama–French paper). No justification is given for any of these selections.

A further demonstration of the limitations of the NERA report on the FFM can be provided by examination of relevant articles in the *Journal of Finance* in 2007. Of the twelve papers that the NERA report on the FFM considers supportive of the well accepted status of the FFM (because they draw on the 1993 Fama–French paper):⁵¹⁹

- Two papers (Chen, Lesmond and Wei; Almeida and Phillipon) deal only with bond returns (not equity), and reference the 1993 Fama–French paper because of its description of bond pricing factors.⁵²⁰ These papers do not support the FFM for setting the cost of equity.
- Three papers use the FFM as the benchmark predictor of returns, but only in the context of showing shortcomings of the FFM that can be corrected by the use of a different model or factor specification. These papers do not support the FFM as proposed in the NERA report on the FFM. Specifically:
 - Boudoukh, Mechaely, Richardson and Roberts state that using payout yields (rather than dividend yields) explains share returns and subsumes the HML factor.⁵²¹
 - Tetlock states that media reports (coverage in Wall Street Journal articles) predict changes in small firms’ returns, and that the SMB factor is therefore a proxy for exposure to media sentiment.⁵²²
 - Franzen, Rodgers and Simin state that the FFM is a poor predictor because it cannot explain distress risk (measured by the Ohlson distress factor).⁵²³
- Two papers (Huang, Wei and Yan; Chhaochharia and Grinstein) use the Carhart (1997) four-factor model as the benchmark predictor of share returns, not the FFM.⁵²⁴ These papers do not support the use of the FFM without addition of a momentum factor.
- Two papers use the CAPM, the FFM and the four factor Carhart (1997) model to set benchmark returns. Both papers use the CAPM without referencing the 1964 Sharpe paper. Specifically:

519 NERA, *Fama–French model*, 12 August 2009, p. 29.

520 L. Chen, D. Lesmond and J. Wei, ‘Corporate Yield Spreads and Bond Liquidity’, *Journal of Finance*, February 2007, vol. 62(1), pp. 119–150 and H. Almeida and T. Philippon, ‘The Risk-Adjusted Cost of Financial Distress’, *Journal of Finance*, December 2007, vol. 62(6), pp. 2557–2586.

521 J. Boudoukh, R. Mechaely, M. Richardson and M. Roberts, ‘On the Importance of Measuring Payout Yield: Implications for Empirical Asset Pricing’, *Journal of Finance*, April 2007, vol. 62(2), pp. 877–916.

522 P. Tetlock, ‘Giving Content to Investor Sentiment: The Role of Media in the Stock Market’, *Journal of Finance*, June 2007, vol. 62(3), pp. 1139–1168.

523 L. Franzen, K. Rodgers and T. Simin, ‘Measuring Distress Risk: The Effect of R&D Intensity’, *Journal of Finance*, December 2007, vol. 62(6), pp. 2931–2968. The source paper for the Ohlson distress factor is J. Ohlson, ‘Financial ratios and the probabilistic prediction of bankruptcy’, *Journal of Accounting Research*, 1980, vol. 18, pp. 109–131.

524 J. Huang, K. Wei and H. Yan, ‘Participation Costs and the Sensitivity of Fund Flows to Past Performance’, *Journal of Finance*, June 2007, vol. 62(3), pp. 1273–1312 and V. Chhaochharia and Y. Grinstein, ‘Corporate Governance and Firm Value: The Impact of the 2002 Governance Rules’, *Journal of Finance*, August 2007, vol. 62(4), pp. 1789–1826.

- Sadka and Scherbina state that all three models perform best when augmented with a liquidity factor.⁵²⁵ The paper does not support the use of the FFM as proposed in the NERA report on the FFM.
- Kacperczyk and Seru find that they can explain managed portfolio returns by a measure of the skill of the manager (reliance on public information).⁵²⁶ The paper supports the use of all three models.
- One paper (Jagannathan and Wang) uses the CAPM, the FFM and the consumption-CAPM, which is a variant of the CAPM that accounts for the covariance of the return on the asset with contemporaneous aggregate consumption growth.⁵²⁷ This paper supports the use of both consumption-CAPM and FFM, but not the (standard) CAPM which it finds inferior.
- One paper (Avramov, Chordia, Jostova and Philipov) uses both the CAPM and the FFM as its baseline return predictor, even though it does not cite the 1964 Sharpe paper.⁵²⁸ This paper supports the use of both models.
- One paper (George and Hwang) uses the FFM as its benchmark return predictor, and finds that the FFM performs well once adjustments are made for tax effects.⁵²⁹ This paper does not support the use of the FFM as proposed by the NERA report on FFM.

The NERA report on FFM finds one paper in the *Journal of Finance* (in 2007) that references the 1964 Sharpe paper on the CAPM. In fact, this paper, by Lettau and Wachter, considers both the CAPM and the FFM.⁵³⁰ Although it does not cite the 1993 Fama–French paper (and hence was not included in NERA’s list of twelve FFM-citing papers above), it does reference a 1992 paper by Fama and French which was equally foundational for the development of the FFM.⁵³¹ Lettau and Wachter state that the Fama–French HML factor can be explained by a dynamic risk based model of time preference reactions to shocks. This paper does not support the use of either the CAPM or the FFM.⁵³²

The AER concludes from this analysis that in general:

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- 525 R. Sadka and A. Scherbina, ‘Analyst Disagreement, Mispricing, and Liquidity’, *Journal of Finance*, October 2007, vol. 62(5), pp. 2367–2404.
 - 526 M. Kacperczyk and A. Seru, ‘Fund Manager Use of Public Information: New Evidence on Managerial Skills’, *Journal of Finance*, April 2007, vol. 62(2), pp. 485–528.
 - 527 R. Jagannathan and Y. Wang, ‘Lazy Investors, Discretionary Consumption, and the Cross-Section of Stock Returns’, *Journal of Finance*, August 2007, vol. 62(4), pp. 1623–1662.
 - 528 D. Avramov, T. Chordia, G. Jostova and A. Philipov, ‘Momentum and Credit Rating’, *Journal of Finance*, October 2007, vol. 62(5), pp. 2503–2520.
 - 529 T. George and C. Hwang, ‘Long-Term Return Reversals: Overreaction or Taxes?’, *Journal of Finance*, December 2007, vol. 62(6), pp. 2865–2896.
 - 530 M. Lettau and J. Wachter, ‘Why Is Long-Horizon Equity Less Risky? A Duration-Based Explanation of the Value Premium’, *Journal of Finance*, February 2007, vol. 62(1), pp. 55–92.
 - 531 The AER notes that the 1992 Fama–French paper is cited by the Walter and Lettau paper, two of the papers that also cite the 1993 Fama–French paper, and two other papers in the *Journal of Finance* in 2007.
 - 532 M. Lettau and J. Wachter, ‘Why Is Long-Horizon Equity Less Risky? A Duration-Based Explanation of the Value Premium’, *Journal of Finance*, February 2007, vol. 62(1), pp. 55–92.

- Citations cannot be relied on to demonstrate acceptance of a model. Rather, in most of the examples above, it is indicative of areas of continued debate or disagreement.
- Papers that cite the 1993 Fama–French paper, rather than supporting the use of the FFM, demonstrate its limitations and seek to propose alternatives.
- The CAPM is considered so well accepted in academic literature that references do not cite the seminal works and papers.

In conclusion, the AER does not consider that the number of citations in the *Journal of Finance* in 2007 provides sufficient evidence or justification to support the submission that the FFM is a well accepted model among academics for the purpose of determining a benchmark rate of return as required under r. 87 of the NGR.

Financial market practitioners

On the basis of the NERA report on the FFM, Jemena submits that a demonstration that the FFM is well accepted is the use of the FFM by financial market practitioners.⁵³³ As evidence, the NERA report on the FFM states that a paper by Graham and Harvey that surveys the practices of US finance managers (the Graham and Harvey survey) indicates that one third of managers used the CAPM with additional risk factors.⁵³⁴ Jemena submits that a significant subset of these managers use size and value factors.⁵³⁵

In examining the Graham and Harvey survey results, the AER notes that it included ten risk factors that might be added to the CAPM by finance managers when estimating their company cost of capital.⁵³⁶ Respondents were able to select any number of factors that they used. The size factor was the fifth most popular choice (34 per cent of respondents), and the value factor (book-to-market ratio) ninth out of the ten options (13 per cent).⁵³⁷

The maximum proportion who could be applying the size and value factors (together in accordance with the FFM) is therefore 13 per cent *of the one third of managers using multi-factor CAPM*, or just 4 per cent of the total sample. However, a usage rate of 4 per cent of managers assumes that *every* manager who applies the value premium also applies the size premium, and *none* of the other eight factors. Further, *every* manager must be applying the size and value factors *as per the FFM*, and not in accordance with any of the alternative models that adjust for these risks. This does not

533 Jemena, *Access arrangement information*, August 2009, p. 143.

534 Jemena, *Access arrangement information*, August 2009, p. 143. Source paper is J. Graham and C. Harvey, 'The theory and practice of corporate finance: evidence from the field', *Journal of Financial Economics*, 2001, vol. 60, pp. 187–243 (Graham and Harvey, 'Corporate finance: evidence', *Journal of Financial Economics*, 2001).

535 Jemena, *Access arrangement information*, August 2009, p. 143.

536 The full list of risk factors (with proportions) is general interest rates (48 per cent), foreign exchange (45 per cent), business cycle (44 per cent), unexpected inflation (38 per cent), firm size (34 per cent)—e.g. the SMB premium, commodity price (33 per cent), term structure of interest rate (25 per cent), distress risk (19 per cent), market-to-book ratio (13 per cent)—e.g. the HML premium, and momentum (11 per cent). See Graham and Harvey, 'Corporate finance: evidence', *Journal of Financial Economics*, 2001, p. 202.

537 Graham and Harvey, 'Corporate finance: evidence', *Journal of Financial Economics*, 2001, p. 202, table 3.

appear plausible. An even distribution of factor use would result in 0.16 per cent of the multi-factor CAPM cohort implementing only size and value factors—that is less than 0.06 per cent of the total sample.

The AER considers that a reasonable interpretation of the Graham and Harvey survey results is that the FFM is used by less than one per cent of US finance managers. The AER considers that this is not a significant subset. It could not be considered reasonable evidence that the FFM is ‘well accepted’ by this participant class.

Further, it relies on US market experience and so is not representative of finance market practitioners in Australia. A more relevant survey by Truong, Partington and Peat shows no evidence of the use of the FFM by Australian finance managers.⁵³⁸ The AER notes submissions on this matter by the APIA, the ENA and the FIG, but considers that these submissions do not provide evidence of the use of the FFM by Australian managers.⁵³⁹

Based on the NERA report on the FFM, Jemena submits that Australian investment portfolios are more consistent with the FFM than the CAPM.⁵⁴⁰ The NERA report on the FFM provides more details using a report by Mercer Investment Nominees (the Mercer report).⁵⁴¹ The Mercer report shows investment portfolios which differ from the market average on size and book-to-market average exist, in keeping with the FFM predictions.⁵⁴²

However, the AER notes that the existence of these portfolios is necessary but not sufficient to establish that the FFM is used by Australian investment fund managers to determine their investment portfolios. Fund managers may have adopted these investment portfolios for a reason entirely different than the factors which the FFM seeks to account for. The Mercer report does not ask whether Australian investors (via their equity managers) use the FFM.⁵⁴³ It is therefore irrelevant to the question of whether or not the FFM is well accepted.

The AER also considers that examination of the year to year variation in size and book-to-market ratios does not support the NERA report on the FFM interpretation of the Mercer report. For example, from December 2003 to December 2004, both size and book-to-market ratios show very little deviation from the market average. Following the argument as outlined in the NERA report on the FFM to its logical conclusion, all Australian investors using the FFM in 2002 abandoned this approach at the end of 2003, but then returned to it at the beginning of 2005. This does not appear plausible.

538 G. Truong, G. Partington and M. Peat, ‘Cost-of-capital estimation and capital-budgeting practice in Australia’, *Australian Journal of Management*, June 2008, vol. 33(1), pp. 95–121.

539 APIA, *Submission to the AER*, 9 November 2009, ENA, *Submission to the AER*, 13 November 2009 and FIG, *Submission to the AER*, 9 November 2009.

540 Jemena, *Access arrangement information*, August 2009, p. 143.

541 NERA, *Fama–French model*, 12 August 2009, p. 32. Source document is Mercer Investment Nominees Limited, *Jemena: Book to price and market cap of Australian equity portfolios*, 10 July 2009 (Mercer, *Australian equity portfolios*, 10 July 2009).

542 NERA, *Fama–French model*, 12 August 2009, pp. 32–33.

543 Mercer, *Australian equity portfolios*, 10 July 2009.

The Mercer report's results may also reflect the selection of an inappropriate market proxy (ASX S&P300).⁵⁴⁴ Further, although there are deviations, the Mercer report itself emphasises that the majority of investment portfolios do not deviate significantly from the market average.⁵⁴⁵ The AER does not consider the Mercer report provides evidence that the FFM is a well accepted model by Australian financial market practitioners and therefore does not support Jemena's claim that the FFM is a well accepted model, as required under r. 87 of the NGR.⁵⁴⁶ Further, the AER considers that evidence does not support Jemena's claim that the FFM provides a best estimate arrived at on a reasonable basis, as required under r. 74 of the NGR.

Regulators

Jemena submits that the revised draft guidelines of the New Zealand Commerce Commission (NZCC) provide evidence that the use of the FFM is accepted as a cross-check method by regulators.⁵⁴⁷ The AER notes that the guidelines cited are in draft form and still being deliberated on.⁵⁴⁸ At a workshop on the approach to estimating the rate of return held on 12 November 2009, the NZCC participants informed it about the limitations of using this model as a check.⁵⁴⁹ For example, many participants expressed reservations about the use of the FFM, even as a cross-check method, emphasising its lack of theoretical underpinnings, the criticism that it is a data mining exercise, and the need for an established data set that may be difficult to practically apply.⁵⁵⁰ Participants also raised that even as a cross-check method consideration about what weight should be given to such methods may limit its use as a cross-check method.⁵⁵¹

The AER is not aware of an Australian or overseas regulator that currently uses the FFM as a primary method of assessing an appropriate rate of return on capital.

The AER considers that at best the NERA report on the FFM outlines that the FFM is being considered as a potential cross-check method by one regulator (the New Zealand Commerce Commission),⁵⁵² but it is certainly not a model that is in use by regulators. Since the FFM is not well accepted in a regulatory context, the AER

544 Mercer, *Australian equity portfolios*, 10 July 2009, p. 1.

545 Mercer, *Australian equity portfolios*, 10 July 2009, pp. 8, 14.

546 This includes consideration of the factors under r. 74(2) of the NGR, which are relevant to the determination of a benchmark efficient rate of return under r. 87(2) of the NGR.

547 Jemena, *Access arrangement information*, August 2009, pp. 143–144 and NERA, *Fama–French model*, 12 August 2009, pp. 33–34.

548 The NZ Commerce Commission commenced the review of the cost of capital in October 2005, and is currently scheduled to finalise the guidelines in the first quarter of 2010. New Zealand Commerce Commission, *Revised draft guidelines: The Commerce Commission's approach to estimating the cost of capital*, 19 June 2009, p. 5.

549 New Zealand Commerce Commission, *Cost of Capital Workshop: 12 November 2009*, pp. 10–11, 12–14, 19, 21, 22–24, 26, viewed 3 December 2009, <<http://www.comcom.govt.nz/IndustryRegulation/Part4/DecisionsList.aspx>>.

550 New Zealand Commerce Commission, *Cost of Capital Workshop: 12 November 2009*, pp. 19, 21, 22–24, viewed 3 December 2009, <<http://www.comcom.govt.nz/IndustryRegulation/Part4/DecisionsList.aspx>>.

551 New Zealand Commerce Commission, *Cost of Capital Workshop: 12 November 2009*, p. 26, viewed 3 December 2009, <<http://www.comcom.govt.nz/IndustryRegulation/Part4/DecisionsList.aspx>>.

552 NERA, *Fama–French model*, 12 August 2009, pp. 33–34.

considers that this indicates the model is not a well accepted model as required by r. 87 of the NGR.

NERA report model specification and outcomes

Model specification

The AER considers that the relevant specification of the FFM needs to meet the requirements of the NGR. However, as outlined below the proposed specification of the FFM is inconsistent with the legislative framework.

First, Jemena submits that the FFM should result in a more accurate estimate than the CAPM, because it is better able to identify other risks, explain historical returns and predict returns.⁵⁵³ The FFM seeks to adjust for business specific risks, but the regulatory framework for assessment is a benchmark exposure to risks. That is, the FFM posits that a business' return should be based on its specific characteristics—the business size and book-to-market ratio. The regulatory framework requires that a rate of return be based on benchmark characteristics reflecting the circumstances of an efficient firm providing regulated services. Hence, recognising that the FFM needs to be adapted to the regulatory framework, the NERA report on the FFM proposes a form of the FFM which is a variant on the original specification. This means that even if the AER was to accept that the (original) FFM is a well accepted model,⁵⁵⁴ the NERA report on the FFM does not use the original specification. Therefore, many of the above mentioned academic references are not relevant to the consideration of the FFM in the NERA report on the FFM.⁵⁵⁵

Second, the NERA report on the FFM's specification of the FFM explains relationships and rates of returns in a US market context. The AER considers that this market has limited relevance to determining the rate of return that reflects the prevailing conditions in Australia.

Third, the specification of the FFM in the Jemena access arrangement proposal does not address the role of expectations in determining the required rate of return for an investor. The CAPM includes an explicit theoretical relationship between return expectations and return outcomes. It is not clear how expectations are derived from ex-post observations under the proposed application of the FFM in the NERA report on the FFM.

In addition, the approach in the NERA report on the FFM to manipulating data prior to parameter estimation represents a distortion of the original FFM by:⁵⁵⁶

- the adjustment of returns for gearing
- the pooling of firms of disparate sizes

553 Jemena, *Access arrangement information*, August 2009, pp. 142–144.

554 The AER clarifies that the FFM would have to be a well accepted model for the relevant purpose, which is the determination of a benchmark rate of return.

555 Fama and French, 'Common risk factors', *Journal of Financial Economics*, 1993, p. 24 and NERA, *Fama–French model*, 12 August 2009, p. 15.

556 NERA, *Fama–French model*, 12 August 2009, pp. 24–25, 37–39, 40–45, 49–50.

- including a *negative* SMB risk premium.

Model outcomes

The AER considers that there are two major reasons why the FFM as specified in the NERA report on the FFM does not meet the requirements of r. 87 of the NGR.⁵⁵⁷ The following discussion below outlines that the FFM:

- has no theoretical grounding, and is driven by an econometric search for variables exhibiting correlations in historical data
- relies on empirical variables whose significance varies across different studies and timeframes.

It further outlines that the particular implementation of the FFM in the NERA report on the FFM:

- does not include a statistical analysis that tests the forecasting ability of the proposed FFM
- does not justify the relevance of the proposed FFM to Australian utilities
- is inconsistent with the original purpose of the FFM in that it does not elucidate the differences between firms
- relies on empirical analysis that is unsound
- adjusts inputs in ways that may alter the underlying relationships.

Basis of the Fama–French model

The AER notes that the FFM is often charged with the criticism of lacking a basis in finance theory and is derived from a data mining exercise, which established the statistical significance of explanatory variables.⁵⁵⁸ The AER considers that given the lack of a theoretical framework, this model may not provide a reasonable basis for determining a benchmark rate of return outside of the frame of reference for the original empirical study and data set.

As a consequence of data mining, the relationships may reflect spurious statistical anomalies or may merely proxy other factors, which are the true cause of variations in the observed rate of return. Given the lack of theoretical underpinning, the AER has

557 More specifically, the NERA FFM does not provide for a benchmark efficient rate of return that produces a best estimate, and is arrived at on a reasonable basis, as required by r. 74(2) of the NGR. These limitations mean that the NERA FFM does not meet the requirements of r. 87(2) of the NGR to provide a return that is benchmark efficient, nor does it meet the requirement to provide a return commensurate with prevailing market conditions.

558 For example, F. Black, 'Beta and return', *Journal of Portfolio Management*, Fall 1993, p. 10, states 'I think most of the Fama and French results are attributable to data mining, especially when they re-examine effects that people have discussed for years.' Also, see New Zealand Commerce Commission, *Cost of Capital Workshop: 12 November 2009*, p. 22, where Professor van Zijl states 'In terms of other models that could be considered, well people do mention Fama–French but Fama–French ultimately just boils down to the data dredging, and is therefore going to be specific to particular time periods, commercial environments, it really hasn't got a lot to recommend itself.'

concerns whether the proposed FFM in the NERA report on the FFM meets the requirements of r. 87 of the NGR because it does not provide for a benchmark efficient rate of return that is commensurate with market conditions and the risk involved in providing reference services. The AER also has concerns that the proposed FFM in the NERA report on the FFM is not consistent with the requirements of r. 74 of the NGR that estimates and forecasts must be arrived at on a reasonable basis and represent the best forecasts and estimates in the circumstances.⁵⁵⁹ The NGR context is very different from that in which the original data set was considered, including:

- the FFM was developed in the US, but the regulatory framework is concerned with Australian capital markets, and therefore the FFM does not reflect prevailing market conditions in which pipeline services are provided⁵⁶⁰
- the FFM was developed to explain patterns of return across the full range of market firms, but the regulatory framework is concerned with an efficient benchmark for regulated utilities to reflect the risks and returns relevant to the delivery of reference services⁵⁶¹
- the FFM was developed in the context of portfolio selection, but the regulatory framework is concerned with the benchmark firm and therefore the FFM may not provide a benchmark efficient rate of return.⁵⁶²

The AER notes that the NERA report on the FFM submits that there is a theoretical basis for the FFM when it states:⁵⁶³

As such, the Fama-French three-factor model has a robust theoretical underpinning—the theory is clear that premiums for specific factors *should only be observed systematically* if the relevant factor is a proxy for non-diversifiable risk.

The AER notes that this ex-post justification using arbitrage pricing theory does not provide a strong theoretical basis for the FFM. Jemena does not present evidence sufficient to even support the arbitrage pricing theory framework, since it does not demonstrate systematic observance of these premiums.

First, considering evidence from a global perspective (but particularly the US market), the AER notes that the academic literature does not present systematic observance of either the HML or SMB risk premium. Table 5.3 presents the papers cited in the NERA report on the FFM which show empirical evidence supporting the FFM, together with studies that find opposing empirical evidence from similar time periods and locations.

559 NGR, r. 74 and r. 87.

560 NGR, r. 87(1).

561 NGR, r. 87(1), 87(2)(a).

562 NGR, r. 87.

563 NERA, *Fama–French model*, 12 August 2009, p. 29.

Table 5.3: Selected literature on the Fama–French three–factor model

Authors	Data		Significant effect? ^a	Premium estimate		
	Country	Years		Value	Size	HML (%)
Fama & French, 1992	US	1963–1990	Yes	Yes	7.7 ^b	2.9 ^b
Fama & French, 1993	US	1963–1991	Yes	Yes	4.9	3.3
Black, 1993	US	1981–1990	N/a	No	N/a	N/r
Kothari et al., 1995	US	1963–1990	No	Yes	N/r	N/r
Davis et al., 2000	US	1929–1997	Yes	No	5.7	2.4
Schwert, 2003	US	1982–2002	No ^c	No	N/a	N/a
Ang & Chen, 2007	US	1926–2001	No	N/a	4.6 ^d	N/a
Da et al., 2009	US	1932–2007	No	No	5.2	2.5
Grauer & Janmaat, 2010	US	1963–2005	No	No	5.3	3.1
Chan et al., 1991	Japan	1971–1988	Yes	No	14.0 ^e	11.1 ^e
Daniel et al., 2001	Japan	1975–1997	No	Yes	7.2 ^e	4.3 ^e
Schrimpf et al., 2007	Germ.	1969–2002	Yes	No	3.7	–2.4
Gregory & Michou, 2009	UK	1975–2005	Yes	No	5.4	0.1

Source: AER analysis; Fama and French, ‘Cross-section of stock returns’, *Journal of Finance*, 1992; Fama and French, ‘Common risk factors’, *Journal of Financial Economics*, 1993; F. Black, ‘Beta and return’, *Journal of Portfolio Management*, 1993, pp. 8–18. Note that the non-significant size premium reported by Black uses data from the 1992 Fama and French paper itself; S. Kothari, J. Shanken and R. Sloan, ‘Another Look at the Cross-section of Expected Returns’, *Journal of Finance*, March 1995, vol. 50(1), pp. 185–224; Davis, Fama and French, ‘Average returns: 1929 to 1997’, *Journal of Finance*, 2000; G. Schwert, ‘Anomalies and market efficiency’, in *Handbook of the Economics of Finance*, editors G. Constantinides, M. Harris and R. Stulz, 2003, *Elsevier Science*, ch. 15, pp. 937–972; A. Ang and J. Chen, ‘CAPM over the long run: 1926–2001’, *Journal of Empirical Finance*, 2007, vol. 14, pp. 1–40 (Ang and Chen, ‘CAPM: 1926–2001’, *Journal of Empirical Finance*, 2007); Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*; R. Grauer and J. Janmaat, ‘Cross-sectional tests of the CAPM and Fama–French three-factor model’, *Journal of Banking and Finance*, 2010, vol. 34, pp. 457–470; Chan, Hamao and Lakonishok, ‘Stock returns in Japan’, *Journal of Finance*, 1991; K. Daniel, S. Titman and J. Wei, ‘Explaining the cross-section of stock returns in Japan: factors or characteristics’, *Journal of Finance*, April 2001, vol. 56(2), pp. 743–767; A. Schrimpf, M. Schröder and R. Stehle, ‘Cross-sectional tests of conditional asset pricing models: Evidence from the German stock market’, *European Financial Management*, November 2007, vol. 31(5), pp. 880–907; A. Gregory, and M. Michou, ‘Industry cost of equity capital: UK evidence’, *Journal of Business Finance and Accounting*, June 2009, vol. 36(5), pp. 679–704.

- Note: Shaded cells are references from the NERA report on the FFM. Non-shaded cells contain selected references that are for similar data sets (country and years) but which show conflicting evidence of size and value premiums.
- na: Not applicable; this academic paper did not investigate this attribute.
- nr: Not reported; this academic paper did investigate this attribute, but did not report this particular figure or value.
- a: This refers to the broadest relevant conclusion reached by the study on each FFM components, assessed at the conventional (5 per cent) level of statistical significance. ‘Value’ refers to both the HML factor and HML coefficients, and ‘size’ to both the SMB factor and SMB coefficients.
- b: Since it is prior to the publication of the 1993 Fama–French paper, this paper does not construct the HML and SMB factors, but equivalent values could be derived from the text.
- c: Value data is from 1994–2002 only.
- d: Ang and Chen construct their book-to-market premium differently to the 1993 Fama–French paper, but an equivalent HML factor could be interpolated from data tables in the text.
- e: These Japanese studies construct the HML and SMB factors using methods that differ slightly from the 1993 Fama–French paper. Accordingly, the premiums have been interpolated to approximate the 1993 Fama–French paper HML premium (highest 30 per cent minus lowest 30 per cent) and SMB premium (smallest 50 per cent minus largest 50 per cent).

As can be seen in Table 5.3, the empirical evidence does not show systematic observance of the Fama–French risk premiums in the US. In response to each paper by Fama and French, subsequent research using the same time period (but often alternative data sets or refined statistical procedures) shows that one or both of the Fama–French risk premiums do not have a statistically significant effect on rates of return. The central motivation for the development of the FFM—that exposure to market risk (that is, equity beta) has no explanatory power for returns—is not consistent with the data as outlined above.

Further, evidence from other countries does not show consistent support for the position outlined in the NERA report on the FFM.⁵⁶⁴ The sole paper cited in the NERA report on the FFM that presents Japanese evidence does not support the size premium,⁵⁶⁵ and later work in this market casts doubt on the existence on the value premium.⁵⁶⁶ In Europe and the UK—noting that the NERA report on the FFM submits that there is supporting evidence in these markets but did not provide any specific references—the indicative studies shown in Table 5.3 do not support the size premium.⁵⁶⁷

564 Jemena, *Access arrangement information*, August 2009, pp.143 and NERA, *Fama–French model*, 12 August 2009, p. 22.

565 Chan, Hamao and Lakonishok, ‘Stock returns in Japan’, *Journal of Finance*, 1991.

566 K. Daniel, S. Titman and J. Wei, ‘Explaining the cross-section of stock returns in Japan: factors or characteristics’, *Journal of Finance*, April 2001, vol. 56(2), pp. 743–767.

567 Jemena, *Access arrangement information*, August 2009, pp.143 and NERA, *Fama–French model*, 12 August 2009, p. 22. See A. Schrimpf, M. Schröder and R. Stehle, ‘Cross-sectional tests of conditional asset pricing models: Evidence from the German stock market’, *European Financial Management*, November 2007, vol. 31(5), pp. 880–907 and A. Gregory, and M. Michou, ‘Industry cost of equity capital: UK evidence’, *Journal of Business Finance and Accounting*, June 2009, vol. 36(5), pp. 679–704.

Second, considering the more relevant Australian market,⁵⁶⁸ the NERA report on the FFM does not present evidence of consistent outcomes for the FFM factors. The NERA on the FFM cites a single peer-reviewed academic paper dealing with Australian evidence (and a second conference paper by the same author).⁵⁶⁹ The AER does not consider that this demonstrates evidence of the Fama–French risk premiums in the Australian market. Rather, after conducting a more thorough investigation, the AER considers that there is no consensus on the magnitude or even the existence of the Fama–French premiums in Australia.

Table 5.4 shows the major papers published on the FFM using Australian data.

Table 5.4: Literature on the Fama–French three–factor model in Australia

Authors	Data years	Risk Premiums		Parameter analysis ^a		
		HML (%)	SMB (%)	Intercept not significant	HML coeff significant	SMB coeff significant
Fama & French, 1998	1975–1995	12.3 ^b	na	na	na	na
Halliwel et al., 1999	1980–1991	14.6 ^b	6.0 ^b	23 of 25	6 of 25	18 of 25
Faff, 2001	1991–1999	14.0 ^b	–9.0 ^{b,c}	20 of 24	7 of 24	11 of 24
Faff, 2004	1996–1999	6.0 ^b	–6.5 ^b	19 of 24	14 of 24	18 of 24
Gaunt, 2004	1993–2001	8.5 ^b	10.0 ^b	19 of 25	21 of 25	13 of 28
Ghargori, Chan & Faff, 2007	1996–2004	10.4 ^b	17.2 ^b	24 of 27	20 of 27	14 of 27
O’Brien et al., 2008	1982–2006	9.4 ^b	4.3	14 of 25	22 of 25	16 of 25
Kassimatis, 2008	1993–2005	12.6 ^b	11.5 ^b	11 of 25	20 of 25	11 of 25
Ghargori, Lee & Veeraghavan, 2009	1993–2005	nr	nr	2 of 12	10 of 12	5 of 12

Source: AER analysis; E. Fama and K. French, ‘Value versus growth: The international evidence’, *Journal of Finance*, 1998, vol. 54, pp. 1975–1999; J. Halliwel, R. Heaney and J. Sawicki, ‘Size and book to market effects in Australian share markets: a time series analysis’, *Accounting Research Journal*, 1999, vol. 12, pp. 122–137; R. Faff, ‘An examination of the Fama and French three-factor model using commercially available factors’, *Australian Journal of Management*, 2001, vol. 26, pp. 1–17; R. Faff, ‘A simple test of the Fama and

568 The Australian market is the relevant market for the delivery of pipeline services, as per r. 87 of the NGR.

569 NERA, *Fama–French model*, 12 August 2009, pp. 11, 16–17. Source documents are Gaunt, ‘Fama–French model: Australian evidence’, *Accounting and Finance*, 2004 and O’Brien, Brailsford, and Gaunt, ‘Market factors in Australia’, *Australasian Finance and Banking Conference*, 2008.

French model using daily data: Australian evidence', *Applied Financial Economics*, 2004, vol. 14, pp. 83–92; Gaunt, 'Fama–French model: Australian evidence', *Accounting and Finance*, 2004; P. Gharghori, H. Chan and R. Faff, 'Are the Fama–French factors proxying default risk?', *Australian Journal of Management*, December 2007, vol. 32(2), pp. 223–249; O'Brien, Brailsford, and Gaunt, 'Market factors in Australia', *Australasian Finance and Banking Conference*, 2008; K. Kassimatis, 'Size, book to market and momentum effects in the Australian stock market', *Australian Journal of Management*, June 2008, vol. 33(1), pp. 145–168; P. Gharghori, R. Lee and M. Veeraraghavan, 'Anomalies and stock returns: Australian evidence', *Accounting and Finance*, 2009, vol. 49, pp. 555–576 (Gharghori, Lee and Veeraraghavan, 'Anomalies and stock returns', *Accounting and Finance*, 2009).

- Note: Shaded cells are references from the NERA report on the FFM.
- na: Not applicable; this academic paper did not investigate this attribute.
- nr: Not reported; this academic paper did not investigate this attribute, but did not report this particular figure or value.
- a: This analysis refers to evaluation of each parameter against the null hypothesis that the value is zero. The FFM predicts that the intercept should not be significantly different from zero, but the HML and SMB coefficients should be significantly different from zero. Reported figures are the number of portfolios with parameter values matching model restrictions. All assessments are at the conventional (5 per cent) level of statistical significance.
- b: Statistically significant from zero (at the 5 per cent level).
- c: This SMB is constructed as the top 33% minus bottom 33% (not top 50% less bottom 50% as per Fama–French 1993).

The HML premiums shown in Table 5.4 vary from 14.6 per cent to 6 per cent, a range that is considered too large to be able to confirm its presence as a risk factor in Australia. The SMB premiums are even more of a problem, since they range from 17.2 per cent to negative 9 per cent, a result that is completely at odds with the original FFM. These contradictory outcomes for the SMB premiums in overlapping periods are a key limitation in demonstrating whether the risk factor is relevant in an Australian market context. This is particularly the case for the FFM which depends entirely on empirical evidence.

Many of the papers in Table 4.5.4 undertake analyses that divide the total data set into a number of portfolios by sorting based on size and value factors. For example, firms may be ordered by size then split at the 20th, 40th, 60th and 80th percentiles (forming five groups, quintiles). Similarly, firms may be ordered by book-to-market ratio and split into quintiles. The intersection of five size groupings and five book-to-market groupings then forms 25 portfolios, and all firms within each portfolio have similar attributes. A regression on these portfolios using the FFM produces several key indicators of the fit of the FFM to the data:⁵⁷⁰

- The intercept of the regression should be statistically indistinguishable from zero. The intercept is the proportion of the observed return that is not explained by the FFM. Although there are several studies where FFM performs well,⁵⁷¹ there are

570 The conventional level of statistical significance, five per cent, is used in all assessments reported below.

571 Notably Gharghori, Chan and Faff, where 24 of 27 portfolios have intercepts that cannot be statistically distinguished from zero. See P. Gharghori, H. Chan and R. Faff, 'Are the Fama–French factors proxying default risk?', *Australian Journal of Management*, December 2007, vol. 32(2), pp. 223–249.

repeated studies where intercepts in more than half the portfolios differ from zero at a statistically significant level.⁵⁷²

- Second, the coefficients for HML and SMB should be statistically distinguishable from zero. These coefficients represent the interaction between the risk premium and each portfolio, so the FFM predicts that the coefficients should be significant in most portfolios. The HML coefficients vary considerably across individual studies, performing very poorly at times,⁵⁷³ while performing well in others.⁵⁷⁴ The SMB coefficients in general show poorer performance, i.e. are significant in two-thirds of the portfolios or less.⁵⁷⁵

The two most recent papers in Table 5.4, which include consideration of many of the predecessor papers, outline the lack of empirical support for the FFM in Australia. Kassimatis states:⁵⁷⁶

The second implication of our results is that the Fama-French factors, as well as the momentum factor, do not seem to work for the Australian market. The latest studies by Fama and French argue that the value premium is pervasive in almost all major stock markets and cannot be explained by the CAPM. Our findings combined with the results of other researchers suggest that the Australian market is an exception to this rule (and maybe not the only one).

Similarly, Gharghori, Lee and Veeraraghavan state:⁵⁷⁷

Our asset pricing tests show that the Fama-French model fails to explain the returns of our test portfolios and is thus less than satisfactory in pricing assets in Australia. While the Fama-French model has been shown to work well in the USA (Fama and French, 1996), this study reveals the inadequacy of the Fama-French model in Australia.

The AER notes that the evidence in the NERA report on the FFM does not present systematic observance of either the HML or SMB risk premium. These are included in Table 5.5 for comparison with the above mentioned data.

572 Notably Gharghori, Lee and Veeraghavan, where only 2 of 12 portfolios have insignificant intercepts (that is, 10 of 12 portfolios have intercepts that are distinguishable from zero). See Gharghori, Lee and Veeraraghavan, 'Anomalies and stock returns', *Accounting and Finance*, 2009.

573 Notably Faff (2001), where just 7 of 24 portfolios have significant HML coefficients. See R. Faff, 'An examination of the Fama and French three-factor model using commercially available factors', *Australian Journal of Management*, 2001, vol. 26, pp. 1-17.

574 Notably Gaunt, where 21 of 25 portfolios have significant HML coefficients. See Gaunt, 'Fama-French model: Australian evidence', *Accounting and Finance*, 2004.

575 Notably Gharghori, Lee and Veeraghavan, where just 5 of 12 portfolios have significant SMB coefficients. Gharghori, Lee and Veeraraghavan, 'Anomalies and stock returns', *Accounting and Finance*, 2009.

576 K. Kassimatis, 'Size, book to market and momentum effects in the Australian stock market', *Australian Journal of Management*, June 2008, vol. 33(1), p. 165.

577 Gharghori, Lee and Veeraraghavan, 'Anomalies and stock returns', *Accounting and Finance*, 2009, p. 575.

Table 5.5: NERA report values for the Fama–French three–factor model in Australia

Data source	Data years	Value effect		Size effect		
		HML premium (%)	Statistical significance	Data years	SMB premium (%)	Statistical significance
DFA, 2009	1975–2008	6.2	Yes	1980–2008	–1.2	No
MSCI, 2009	1975–2008	3.6	No	2001–2008	3.9	No

Source: NERA, *Fama–French model*, 12 August 2009, pp. 39, 55.

The HML premium is 6.2 per cent and statistically significant based on the Dimensional Fund Advisers (DFA) dataset, but 3.6 per cent and insignificantly different from zero based on the MSCI dataset. The SMB premium is –1.2 per cent based on the DFA dataset, but 3.9 per cent based on the MSCI dataset—and both cases are statistically indistinguishable from zero.

This can best be characterised as an unsystematic observance of the Fama–French risk factors. Indeed, the variable performance of the two additional variables used in the FFM is as expected for variables determined on the basis of an empirical relationship and without the backing of an economic theory.

The CAPM has a strong theoretical basis and is used to predict rates of return—as a model of expectations. In contrast, the FFM arises from empirical observations and has no remaining justification when contrasting empirical observations that arise in alternative data sets. The practical aspects of the implication of the FFM in an Australian context are considered in ‘Other consideration for the NERA implications’.

Da, Guo and Jagannathan working paper

On 22 December 2009, Jemena made a submission on the AER’s draft decision for ActewAGL’s ACT, Queanbeyan and Palerang gas distribution network.⁵⁷⁸ The submission includes a report by NERA (the NERA report on DGJ09), dealing with aspects of a working paper by Da, Guo and Jagannathan on the CAPM (the Da, Guo and Jagannathan working paper) referred to in that draft decision.⁵⁷⁹ In its cover letter for this submission Jemena requests that the AER also consider this material for the Jemena access arrangement review.⁵⁸⁰

Jemena states—based on the NERA report on DGJ09—that the Da, Guo and Jagannathan working paper cannot be relied on because of methodological errors and data limitations.⁵⁸¹ Further, Jemena states that the AER has incorrectly interpreted the

578 Jemena, *Submission on ActewAGL decision*, 22 December 2009. Attached report is NERA, *Review of Da, Guo and Jagannathan empirical evidence on the CAPM: A report for Jemena Gas Network*, 21 December 2009 (NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009).

579 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009. The source paper is Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*.

580 Jemena, *Submission on ActewAGL decision*, 22 December 2009, p. 1.

581 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 3–12.

evidence in the working paper,⁵⁸² and concludes that the empirical evidence in the Da, Guo and Jagannathan working paper rejects the CAPM but supports the position that factors additional to beta (such as those in the FFM) are required to correctly explain the rate of return on equity.⁵⁸³

The AER notes that its considerations of the limitations of the FFM for the Jemena draft decision rely on a range of material and not just this working paper.⁵⁸⁴ That said, the AER sets out the details of its consideration of the NERA report on DGJ09⁵⁸⁵ in appendix A, as the draft decision does include references to the Da, Guo and Jagannathan working paper.

In summary, the AER relies on aspects of the Da, Guo and Jagannathan working paper as part of a range of papers that critique the FFM.⁵⁸⁶ The concerns raised by the NERA report on DGJ09 do not apply to this broad range of papers and so do not affect the AER's overall conclusion on the appropriateness of the FFM. Considering the Da, Guo and Jagannathan working paper in isolation, the AER notes that several criticisms in the NERA report on DGJ09 are not valid. The AER considers that the Da, Guo and Jagannathan working paper does not show support for the FFM, but does show support for the Sharpe–Lintner CAPM.⁵⁸⁷

Empirical support from US utility study

To justify the FFM as a better predictor than the Sharpe–Lintner CAPM, the NERA report on the FFM undertakes an examination of 21 US publicly traded regulated utilities from 1980 to 2009.⁵⁸⁸ Two regression analyses (one using the Sharpe–Lintner CAPM, the other using the FFM) are undertaken to determine the unexplained excess returns (labelled alpha) from each pricing model.

The AER considers that these analyses do not support the conclusion that the FFM is a better predictor of equity returns than the Sharpe–Lintner CAPM for the following reasons.

First, the NERA report on the FFM does not examine return prediction performance but rather within sample return outcomes. The regression analyses are undertaken on the entire sample period (1980 to 2009) to determine the best possible fit for the data.⁵⁸⁹ To test the predictive power of a model, the standard approach is to take the regression coefficients determine in-sample and test them against out-of-sample data.

582 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 13–15.

583 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 15–25.

584 The AER considers there are many such papers—for example, see tables 5.3 and 5.4 earlier in this chapter. The AER notes that its considerations of the relative evaluation of the FFM relative to the CAPM also relies on a range of material.

585 This consideration occurred to the extent possible given the time available. Submissions on the Jemena proposal closed on 10 November 2009, but the letter from Jemena (and accompanying report) was not received until 22 December 2009.

586 See tables 5.3 and 5.4 of this draft decision.

587 As the FFM does not meet the requirements of r. 87 of the NGR, the AER does not need to make an assessment under r. 40(3) of the NGR.

588 NERA, *Fama–French model*, 12 August 2009, pp. 23–26.

589 NERA, *Fama–French model*, 12 August 2009, p. 25.

This basic experimental examination is not attempted in the NERA report on the FFM.

Statistically, adding another variable to a regression equation will always improve the amount of sample variability explained by the model. However, increasing the number of variables in a regression may increase in-sample explanatory power but may also reduce out-of-sample forecast power. No statement can be made about whether one model is ‘a better predictor of returns’ than another model when no analysis has considered the model’s predictive function.

Second, the observed US share returns have been altered such that they do not reflect the actual firms’ circumstances. The leverage transformation used in the NERA report on the FFM assumes no tax (or that gamma is equal to one), which is not a relevant assumption for a US environment.⁵⁹⁰ Further, the gearing change would alter other business fundamentals (for instance, changes in interest costs, business distress risks and the book-to-market ratio). Even, if the AER was to accept that US market data was consistent with prevailing market conditions in Australia—which as outlined above it does not—the US inputs used cannot be considered representative of observed share market data, so the conclusions have limited relevance to the actual returns required by US gas and electricity utilities.⁵⁹¹

Third, the statistical treatment is insufficient and opaque. The standard statistical test for testing the fit of two competing models, the log-likelihood ratio test, is not performed. No statistical diagnostic tests are undertaken to demonstrate that the error structures implied by the data are consistent with efficient estimation of the parameters. The observed alphas for the CAPM and the FFM are statistically indistinguishable from each other, and the conclusions are void unless they first demonstrate the MRPs within the sample are not unexpected or atypical. The market return, HML and SMB risk premiums are not stated. Although NERA states that certain alpha values are not statistically significant at conventional (5 per cent) levels, the type of statistical test undertaken is not stated nor is the value listed.⁵⁹²

Other considerations for the NERA implementation

The AER considers there are several problems regarding the estimation of the FFM in the NERA report on the FFM.

In order to derive a cost of capital for a regulated business, the NERA report on the FFM either aggregates data before estimation or averages the outcome for individual firms.⁵⁹³ However, all the firms have different sizes and variations in the book-to-market valuations which would lead one to expect, under the FFM, that they should exhibit different costs of capital. By using an average estimate the NERA report on the FFM’s implementation of the FFM dilutes the variation in returns that the FFM

590 NERA, *Fama–French model*, 12 August 2009, p. 24.

591 Further, the AER notes that these US firms receive regulated revenues based on the dividend growth model, so any comparison may be interpreted as revealing the deficiencies of this approach (rather than problems with the CAPM).

592 NERA, *Fama–French model*, 12 August 2009, p. 26.

593 NERA, *Fama–French model*, 12 August 2009, pp. 24–25, 37–38, 44–45, 49–50, 55–60.

seeks to explain and model. As outlined previously, the NERA report on the FFM's specification of the FFM does not represent a standard application of the FFM.⁵⁹⁴

The NERA report on the FFM outlines that the FFM is used because it is more accurate than the CAPM.⁵⁹⁵ The AER notes that any increase in accuracy arising from the use of three risk premiums (instead of one) arises only in the context of within sample explanatory power. This is a statistical artefact of the model as a consequence of including additional explanatory variables. Even variables that are not relevant to the estimation of the rate of return of capital will give this result—the greater explanatory power may even reach the threshold of statistical significance despite no true relationship between a randomly selected variable and the dependent variable.

Several of the errors made in the analysis of US utility returns are repeated in the estimation for Australian utilities. As outlined above, the gearing transformation is inconsistent with Jemena's access arrangement proposal, since it assumes no tax (or that gamma is one) but elsewhere taxation adjustments to returns are proposed to be based on a gamma of 0.2.⁵⁹⁶ Further, re-gearing of returns alters the return relationship with the independent variables, which may distort the statistical estimation.

The AER notes that there is no assessment in the NERA report on the FFM about whether the FFM even holds in the Australian market. It is not clear that the FFM factors have the same relevance as in the US market. For example, what passes for a small firm in the US may be considered a large firm in Australia. There is no analysis of whether the predicted coefficients for SMB and HML are observed in the Australian market. For example, to be consistent with the FFM, regression analysis conducted for small Australian firms should show a coefficient for the size premium of close to one. However, the NERA report on the FFM does not provide this type of analysis.

The AER considers that the FFM proposed by Jemena—supported by the NERA report on the FFM—does not meet the requirements of r. 87 of the NGR. That is, it does not provide for a benchmark efficient rate of return that is commensurate with market conditions and the risk involved in providing reference services. The AER considers that the FFM is not consistent with the requirements in r. 74 of the NGR that estimates and forecasts must be arrived at on a reasonable basis and represent the best forecasts and estimates in the circumstances.⁵⁹⁷ That is, the FFM has no theoretical basis, and relies on empirical support to include market related factors which may be irrelevant to return expectations. The implementation of the FFM in the NERA report on the FFM does not demonstrate a reasonable statistical basis or justification in the relevant market for funds i.e. Australia.

594 Fama and French, 'Common risk factors', *Journal of Financial Economics*, 1993, p. 24 and NERA, *Fama–French model*, 12 August 2009, p. 15.

595 Jemena, *Access arrangement information*, August 2009, p. 143 and NERA, *Fama–French model*, 12 August 2009, pp. 10–16, 22–26.

596 NERA, *Fama–French model*, 12 August 2009, pp. 24, 43.

597 NGR, r. 74 .

Conclusion

The AER considers that Jemena's proposal to use the FFM to determine the rate of return does not meet the requirements of r. 87 of the NGR.⁵⁹⁸ The key reasons for the conclusion that the FFM is not a well accepted financial model are:

- the FFM is not used by regulators to establish a rate of return, either in Australia or amongst equivalent regulatory bodies overseas⁵⁹⁹
- the FFM is not used by Australian finance managers to assess a rate of return⁶⁰⁰
- the FFM does not have a solid theoretical premise, and the form of the FFM proposed by Jemena does not accord with the original specification or context of the FFM. This may limit its applicability as outlined in determining a rate of return in the regulatory context⁶⁰¹
- the empirical evidence does not present consistent findings for the risk factors used in the FFM
- well established parameter inputs in an Australian market context are not available for use in the FFM⁶⁰²

For the reasons outlined above, the AER requires Jemena to amend its access arrangement proposal to use the standard Sharpe–Lintner CAPM to estimate the cost of equity for its access arrangement. The risk-free rate, equity beta value and MRP value to be used in the CAPM are discussed in sections 5.6, 5.7 and 5.8 of this chapter respectively.

598 This includes consideration of the factors under r. 74(2) of the NGR, which are relevant to the determination of a benchmark efficient rate of return under r. 87(2) of the NGR. The AER considers that the NERA FFM does not produce a best estimate that is arrived at on a relevant basis.

599 AER, *Decision: Powerlink Queensland transmission network revenue cap 2007–08 to 2011–12*, 14 June 2007; AER, *Final decision: Australian Capital Territory distribution determination 2009–10 to 2013–14*, 28 April 2009; AER, *Final decision, New South Wales distribution determination 2009–10 to 2013–14*, 28 April 2009. AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009. IPART, *Draft Report and Draft Determination: Review of regulated retail tariffs and charges for electricity 2010–2013*, December 2009, pp. 190–199 (Appendix E: Weighted Average Cost of Capital). IPART, *Final decision: Revised access arrangement for AGL Gas Networks*, April 2005, pp. 94–95. ESC, *Final decision: Gas access arrangement review 2008–2012*, 7 March 2008, pp. 445–490. OFGEM, *Final proposals: Electricity distribution price control review four*, November 2004, pp. 105–106. NZCC, *Decision paper: Authorisation for the control of supply of natural gas distribution services by Powerco Ltd and Vector Ltd*, 30 October 2008, pp. 160–192.

600 G. Truong, G. Partington and M. Peat, 'Cost-of-capital estimation and capital-budgeting practice in Australia', *Australian Journal of Management*, June 2008, vol. 33(1), pp. 95–121.

601 Sharpe, 'Capital Asset Prices', *Journal of Finance*, 1964; J. Lintner, 'The Valuation of Risky Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets', *The Review of Economics and Statistics*, 1965, vol. 47, pp. 13–37; J. Mossin, 'Equilibrium in a Capital Asset Market', *Econometrica*, 1966, vol. 34(2), pp. 768–83. F. Black, 'Capital market equilibrium with restricted borrowing', *Journal of Business*, July 1972, vol. 45, pp. 444–454.

602 APIA, *Submission to the AER*, 9 November 2009, p. 4.

5.6 Risk-free rate

The risk-free rate measures the return an investor would expect from an asset with zero default risk. The yield on long-term Commonwealth Government Securities (CGS) is often used as a proxy for the risk-free rate because the risk of government default on interest and debt repayments is considered to be low.⁶⁰³

In the CAPM framework, all information used for deriving the rate of return should be as current as possible in order to achieve an unbiased forward looking rate and a rate of return that is commensurate with prevailing conditions in the market for funds. While it may be theoretically correct to use the on the day rate as it represents the latest available information, this approach can expose the service provider to daily volatility. For this reason, an averaging method is used to minimise volatility in observed bond yields.⁶⁰⁴

5.6.1 Jemena's proposal

Jemena proposes the annualised yield on CGS with a maturity of ten years as a proxy for the risk-free rate, consistent with the AER's review of WACC parameters for electricity transmission and distribution network service providers (the WACC review).⁶⁰⁵ Jemena proposes to interpolate on a straight line basis the yields on the CGS maturing on 15 March 2019 and 15 April 2020 to determine a yield consistent with a 10-year maturity.⁶⁰⁶

Jemena proposes to use a 20 business days historical average of the annualised yield on 10-year CGS to 31 July 2009 based on the indicative mid rates published by RBA to determine the nominal risk-free rate at 5.60 per cent for the purposes of its access arrangement proposal.⁶⁰⁷ Jemena makes no proposal regarding a procedure for updating the risk-free rate closer to the time of the final decision. However, Jemena submits that the debt risk premium will require updating based on a future averaging period.⁶⁰⁸

When comparing the components used as inputs in the FFM and the Sharpe–Lintner CAPM, Jemena has used the same risk-free rate in both formulas and for determining the cost of debt.⁶⁰⁹

5.6.2 Submissions

The EMRF submits that the AER's WACC review on the approach for developing a parameter such as the risk-free rate represents the best assessment of the value.⁶¹⁰

603 AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, pp. 128–139 (AER, *Final decision: WACC review*, 1 May 2009).

604 AER, *Final Decision: WACC review*, 1 May 2009, pp. 170–174.

605 AER, *Final decision: WACC review*, 1 May 2009, pp. 128–174.

606 Jemena, *Access arrangement information*, August 2009, p. 149.

607 Jemena, *Access arrangement information*, August 2009, p. 149.

608 Jemena, *Access arrangement information*, August 2009, p. 146.

609 Jemena, *Access arrangement information*, August 2009, p. 141.

610 EMRF, *Submission to the AER*, November 2009, p. 57.

5.6.3 AER's analysis and considerations

The risk-free rate is a market wide parameter that will not vary between different types of businesses. The AER accepts that the risk-free rate should be estimated using the yield on a 10-year CGS. The AER considers that a 10-year term assumption is consistent with the findings of the WACC review.⁶¹¹

The AER also considers that the risk-free rate should be estimated using a 10 to 40 business days averaging period. As discussed in the WACC review, the AER considers that a 10 to 40 business days averaging period represents the optimal length of time to balance the trade-off between 'volatility driven error' and 'old information driven error.'⁶¹² The AER accepts Jemena's proposed length for the averaging period of 20 days.

Jemena has not proposed a start (or end) date for the averaging period to update the risk-free rate in the final decision. The AER notes that Jemena recognises that a future averaging period is required to determine the debt risk premium.⁶¹³ As discussed in section 5.4.2, the cost of debt is based on the debt risk premium added to the risk-free rate. The AER considers that the same averaging period for estimating the debt risk premium should also be used for estimating the risk-free rate in order to maintain consistency in the cost of debt formula. This approach is consistent with accepted practice and its previous decisions to determine a benchmark rate of return as required under r. 87 of the NGR, and which can also be said to employ financial information and calculations made, consistently on the same basis.⁶¹⁴

As stated in the WACC review, the AER determines a risk-free rate that is observed as close as practically possible to the date of the final decision.⁶¹⁵ This approach is consistent with accepted finance theory, in order to determine an unbiased best estimate, arrived at on a reasonable basis,⁶¹⁶ that reflects prevailing market conditions.⁶¹⁷ The AER has determined a date for the averaging period to establish the risk-free rate for the final decision.⁶¹⁸

The AER also notes that in most cases, there will not be any CGS that expire exactly 10 years from the sampling date for the risk-free rate. The AER therefore accepts the

611 AER, *Final decision: WACC review*, 1 May 2009, pp. 171–174.

612 AER, *Final decision: WACC review*, 1 May 2009, p. 170.

613 Jemena, *Access arrangement information*, August 2009, p. 146.

614 This includes consideration of the factors under r. 73(3) of the NGR, which are relevant to the determination of a benchmark efficient rate of return that is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services in accordance with r. 87 of the NGR.

615 AER, *Final decision: WACC review*, 1 May 2009, pp. 19, 30.

616 NGR, r. 74(2).

617 NGR, r. 87; AER, *Final decision: Australian Capital Territory distribution determination 2009–10 to 2013–14*, 28 April 2009, pp. 96, 263 (AER, *Final decision: ACT distribution determination*, 28 April 2009).

618 The AER's consideration of this date is set out in confidential appendix B.

use of a straight line interpolation between the two adjacent CGS to determine a proxy value, as proposed by Jemena.⁶¹⁹

For this draft decision, the AER will determine the risk-free rate using the average of the observed yields for CGS during 20 business days from 26 November to 23 December 2009 to calculate an indicative WACC. This results in a nominal risk-free rate of 5.52 per cent. The AER requires Jemena to amend its access arrangement information as set out in amendment 5.1.

The AER will update the risk-free rate and use the 20 business days averaging period in the final decision in accordance with the date in confidential Appendix B.

5.7 Equity beta

The equity beta measures the standardised correlation between the returns on an individual risky asset or business with that of the overall market. It represents the ‘riskiness’ of the business’ returns compared with that of the market. The risk results from the possibility that actual returns will differ from expected returns—the greater the uncertainty around the returns of a business, the greater its level of risk.⁶²⁰

5.7.1 Jemena’s proposal

Jemena proposes using the FFM to estimate the cost of equity instead of the Sharpe–Lintner CAPM. The FFM requires three multi-variate betas (market beta, growth beta and size beta) as an input in the formula to estimate the cost of equity instead of a single equity beta used in the CAPM.⁶²¹ For this reason, Jemena did not propose an equity beta value for use in the CAPM.

5.7.2 Submissions

The EMRF submits that an equity beta of no more than 0.68 should apply, and the higher value of 0.8 that the AER determined in the WACC review is at odds with the desire to ensure a value of the WACC provides a reasonable opportunity to recover at least efficient costs.⁶²²

5.7.3 AER’s analysis and considerations

As discussed in section 5.5.3 above, the AER rejects Jemena’s proposal to use FFM for calculating the cost of equity and instead uses the CAPM. The CAPM uses the equity beta as an input to calculate the cost of equity

The AER estimates an equity beta of 0.8 for a benchmark efficient service provider which it has applied in recent draft decisions for the ActewAGL and Country Energy gas distribution access arrangements.⁶²³

619 Jemena, *Access arrangement information*, August 2009, p. 149.

620 AER, *Final decision: WACC review*, 1 May 2009, p. 239.

621 Jemena, *Access arrangement information*, August 2009, p. 141.

622 EMRF, *Submission to the AER*, November 2009, pp. 55–56.

623 AER, *Draft decision, ActewAGL distribution access arrangement proposal 1 July 2010 – 30 June 2015*, November 2009, pp. xiv, xxxvii, 62–65, 72 (AER, *Draft decision: ActewAGL distribution access arrangement proposal*, November 2009), and AER, *Draft decision, Country Energy Access arrangement*

Consistent with these recent draft decisions, the AER considers that the empirical evidence presented in the WACC review contains the best available estimate of the equity beta that would apply to a gas distribution network service provider.⁶²⁴ Although the WACC review was conducted in an electricity context, gas and electricity businesses are close comparators. Further, the sample set of data used to derive the equity beta is predominantly made up of gas businesses. The sample in the WACC review provides a value for gas equity beta of between 0.4 and 0.7. Therefore, an equity beta of 0.7 provides the service provider with an opportunity to recover at least its efficient costs incurred in providing reference services and meeting regulatory requirements.⁶²⁵

The AER notes the EMRF submission suggesting that an equity beta of no more than 0.68 should be used for Jemena's access arrangement.⁶²⁶ However, the AER also has considered the need for regulatory certainty and adopting a conservative approach in estimating the equity beta, commensurate with prevailing market conditions and the risks involved in providing reference services. On this basis, the AER considers that a value of 0.8 provides a best estimate of the equity beta arrived at on a reasonable basis.⁶²⁷

Conceptual view

The AER considers that there are strong conceptual grounds for concluding that the asset beta for gas network businesses is significantly less than the asset beta of the market portfolio. Moreover, after accounting for the gearing ratio, the equity beta for gas network businesses is still likely to be less than the market average equity beta of 1.0.

The nature of the gas industry (including the regulatory regime) means that the equity beta of a benchmark efficient service provider is likely to be significantly less than the beta of the market portfolio. This is because demand for energy is relatively inelastic, and the nature of regulated price and revenue caps further reduces fluctuation in income. Further, any unforeseen costs or change in business circumstances can also be readdressed during the access arrangement period through various mechanisms and options for regulated gas businesses.⁶²⁸ As a result, the regulated gas business has stable cash flows relative to the market.⁶²⁹

Rule 74(2) of the NGR requires that a forecast or estimate is arrived at on a reasonable basis and is the best estimate possible in the circumstances. The AER therefore seeks objective empirical evidence to determine the equity beta of the efficient benchmark service provider.

proposal 1 July 2010 – 30 June 2015, November 2009, pp. xiv, xxxiv, 47–49, 60 (AER, *Draft decision: County Energy access arrangement proposal*, November 2009).

624 AER, *Final decision: WACC review*, 1 May 2009, pp. xv–xviii, 239–292, 343–361.

625 NGL, s. 24(2).

626 EMRF, *Submission to the AER*, November 2009, pp. 50–57.

627 NGR, r. 74.

628 NGR, r. 97 and NGR, r. 65.

629 AER, *Final decision: WACC review*, 1 May 2009, pp. 108, 249–254.

Empirical estimation of equity beta from historical returns

The primary method for determining an equity beta, where there is sufficient market data, is to calculate the historical correlation between return on a particular share (or set of shares) and return on the market.

The AER notes that methodological issues are an important consideration when estimating the equity beta from historical share returns. The AER has determined the appropriate methodology to ensure that the best estimate for beta is arrived at on a reasonable basis with reference to the prevailing conditions and the risks involved in providing reference services. The AER has previously stated its preference for the use of:

- continuous returns rather than discrete returns⁶³⁰
- a standardised approach to de-levering and re-levering⁶³¹
- point estimates rather than confidence intervals⁶³²
- data that includes ‘unrepresentative’ periods, subject to close examination⁶³³
- both long and short estimation periods, striking a balance between statistical precision and data relevance.⁶³⁴

In order to determine the best estimate of equity beta for a benchmark efficient service provider, the AER considers benchmark levels of efficiency, gearing and other financial parameters of a number of businesses. In the WACC review the AER established a sample of Australian businesses, comprising gas network businesses, electricity network businesses, network businesses active in both electricity and gas, and utility businesses more generally.⁶³⁵

The AER considers that this data set remains the best comparator set. This data set was established by Associate Professor Henry of the University of Melbourne, acting as a consultant to the AER.⁶³⁶ The inclusion of one electricity-only businesses in this sample of businesses (Spark Infrastructure) does not distort (i.e. make less

630 AER, *Final decision: WACC review*, 1 May 2009, pp. 264–265; also AER, Explanatory statement: electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters, December 2008, Table 8.3, pp. 199–200 (AER, Explanatory statement: WACC review, December 2008).

631 AER, *Final decision: WACC review*, 1 May 2009, pp. 265–267.

632 A confidence interval is the statement that the true value for an unknown parameter lies within an upper and lower bound with a given percentage probability. By contrast, a point estimate gives a single estimate for the true value of an unknown parameter with a stated standard error indicating precision. See AER, *Final decision: WACC review*, 1 May 2009, pp. 288–291.

633 The AER notes that some analysts label as unrepresentative the ‘technology bubble’, the ‘mining boom’, and the ‘global financial crisis’; exclusion of each of these periods would leave almost no data from the last 15 years. See AER, *Final decision: WACC review*, 1 May 2009, pp. 270–271, 274–275.

634 AER, *Final decision: WACC review*, 1 May 2009, pp. 84–90, 271.

635 AER, *Final decision: WACC review*, 1 May 2009, p. 255.

636 AER, *Final decision: WACC review*, 1 May 2009, pp. 263–274, 315–332; also O. Henry, *Estimating beta: Report submitted to ACCC*, 23 April 2009 (Henry, *Estimating beta*, April 2009).

conservative) the estimate of equity beta. Although the electricity-only business has an equity beta higher than the average of the portfolio, exclusion of this business would not significantly change the equity beta estimate. Nonetheless, the AER considers that as the electricity-only business is a close comparator, the comparator set is best considered as a whole.

The comparator set indicates that the equity beta of a benchmark efficient gas network service provider is between:

- 0.45 and 0.71 (average of individual re-levered equity beta point estimates, 2002–03 to 2008, weekly/monthly observations)⁶³⁷
- 0.49 and 0.69 (average of individual re-levered equity beta estimates, 1990–1998 and 2002–03 to 2008)⁶³⁸
- 0.55 and 0.68 (median re-levered time-varying equal weighted portfolio equity beta estimates, 2002–03 to 2008, monthly observations)⁶³⁹
- 0.43 and 0.58 (median re-levered time-varying equal weighted portfolio equity beta estimates, 2002–03 to 2008, weekly observations).⁶⁴⁰

Consistent with the WACC review,⁶⁴¹ the AER considers that the reasonable range of the equity beta for a gas network business of between 0.4 and 0.7 is justified on empirical information, and provides a reasonable basis for determining a best estimate.⁶⁴²

Consideration of sector specific volatility

Jemena proposes that gas networks are riskier than electricity networks because of higher volatility in cash flows from higher volume uncertainty. As a result, Jemena submits that an efficient gas network generally has a lower credit rating and higher equity beta (when using the CAPM) or market beta (when using the FFM) than an efficient electricity network business.⁶⁴³

637 AER, *Final decision: WACC review*, 1 May 2009, Table 8.5, p. 318 and Henry, *Estimating beta*: April 2009.

638 AER, *Final decision: WACC review*, 1 May 2009, p. 318, Table 8.6; also ACG, *Beta for regulated electricity transmission and distribution: Report to Energy Networks Association, Grid Australia and Australian Pipeline Industry Association*, 17 September 2008, pp. 42–44; and ACG, *Australian Energy Regulator's draft conclusions on the weighted average cost of capital parameters: Commentary on the AER's analysis of the equity beta, Report to Energy Networks Association, Grid Australia and APIA*, January 2009, pp. 22–23.

639 AER, *Final decision: WACC review*, 1 May 2009, Table 8.10, p. 324; also Henry, *Estimating beta*, April 2009.

640 AER, *Final decision: WACC review*, 1 May 2009, Table 8.10, p. 324; also Henry, *Estimating beta*, April 2009.

641 AER, *Final decision: WACC review*, 1 May 2009, Table 8.10, pp. 243–244, 263–274, 317–332.

642 NGR, r. 74(2).

643 Jemena, *Access arrangement information*, August 2009, p. 138.

Jemena further states that gas volumes are more uncertain than electricity demand because:⁶⁴⁴

- gas networks have more options to expand their networks to enable new, but uncertain demand to connect
- gas is a discretionary fuel, particularly in coastal NSW where the climate is relatively benign
- unlike an electricity network, Jemena does not have an exclusive franchise and is therefore subject to ongoing asset bypass risk
- unlike electricity, Jemena is subject to a capital redundancy mechanism.

Jemena submits that this view is supported by the AER where it was noted in the WACC review:

The AER has previously acknowledged in its explanatory statement that gas businesses may have a higher business risk than electricity businesses due [to] greater volatility in cash-flows from relatively higher volume risk compared to electricity network businesses.⁶⁴⁵

The AER considers that the submission made by Jemena that gas businesses require a higher estimated equity beta than electricity businesses because of higher volatility does not take into consideration the conservative approach the AER adopts in determining the equity beta. Further the equity beta set by the AER reflects the exposure of a benchmark efficient service provider's returns to macroeconomic risk factors (i.e. non-diversifiable, systematic risk), and not the business risk faced by any particular individual service provider.

The AER also considers that several statements it made in the WACC review require clarification, since these statements did not sufficiently distinguish between exposure to business specific risk and exposure to systematic risk.⁶⁴⁶ This clarification is required because only the latter risk is relevant to equity beta. The Sharpe–Lintner CAPM postulates that the diversified investor does not need compensation for business specific risk. The investor chooses a portfolio so that the downside risk for one business is offset by upside risk for other businesses. This means that over time only the market risk which cannot be diversified (systematic risk) matters. The equity beta in this decision therefore reflects the expected return an investor would require to add the benchmark gas business to a well diversified portfolio. It should be noted, however, that not all businesses have equal exposure to systematic risk. Therefore, different businesses have different equity beta values.

The issues raised by Jemena regarding higher gas volume risk compared to electricity are further addressed below:

644 Jemena, *Access arrangement information*, August 2009, pp. 138–139.

645 AER, *Final decision: WACC review*, 1 May 2009, p.108, cited by Jemena, *Access arrangement information*, August 2009, pp. 138–139.

646 AER, *Final decision: WACC review*, 1 May 2009, pp. 107–108, 257–258, 260, 371.

- Jemena has not thoroughly assessed the risks of uncertain demand when preparing the business cases for expansion projects. The AER considers that this issue represents a business specific risk and can not be compensated for through the equity beta.
- The AER notes that one of the primary drivers of business specific risk for a gas distribution network business is volume risk. Volume risk arises because gas is used for specific purposes (e.g. heating) and therefore volumes are dependent on weather trends that may deviate substantially from average expectations. There are also technological impacts (e.g. improvements in the efficiency of appliances) that may alter usage volumes. While the AER accepts that gas businesses may have greater volume risk the degree to which volume risk represents business specific risk or systematic (market wide) risk is not yet settled.
- Rule 94(3)(a) and (b) of NGR sets out bounds for a tariff which means that it is unprofitable to bypass a pre-existing gas network. Accordingly, Jemena's concern that it does not have an exclusive franchise and is subject to ongoing asset bypass risk does not apply. This risk is not likely to materialise because if a third party wants to bypass the network it would be exposed to stand alone cost. In accordance with r. 94(3)(a), a tariff is set so that the cost to the user is below the stand alone cost making it unprofitable to bypass the network as outlined in the Tariffs–distribution pipelines chapter 12 of this draft decision. Moreover, the AER notes that Jemena at present has a natural monopoly in the supply of gas to certain geographic areas in NSW, and it is very similar to electricity distribution networks. As such, the asset bypass risk in many parts of Jemena's network may be limited. The AER also considers that this type of risk is business specific and therefore can not be compensated for through the equity beta.
- Jemena raises the issue that electricity service providers are not subject to a capital redundancy mechanism. However, in doing so, Jemena has not made clear that it has voluntarily included a capital redundancy mechanism even though r. 85 of NGR does not require a service provider to do so.⁶⁴⁷

The AER notes that the equity beta needs to be considered on an industry or sector specific basis. However, the AER observes that the benchmark gas distribution service provider operates in a regulated environment that includes a number of features common to the electricity service providers considered in the WACC review, which effectively lowers these service providers' exposure to systematic risk relative to an unregulated competitive business.⁶⁴⁸ These features include:⁶⁴⁹

⁶⁴⁷ Jemena, *Access arrangement information*, August 2009, p. 139.

⁶⁴⁸ The AER considers that the conceptual definition of the benchmark efficient gas network service provider is a 'pure play' regulated gas network business operating within Australia without parent ownership. This definition mirrors the definition of the benchmark electricity network service provider in the WACC review. AER, *Final decision: Electricity transmission and distribution network service providers: Review of the weighted average cost of capital (WACC) parameters*, 1 May 2009, pp. 79–82.

⁶⁴⁹ AER, *Final decision: WACC review*, 1 May 2009, pp. 249–250.

- the tariff variation mechanism allows for the annual adjustment for inflation, lowering exposure to inflation risk⁶⁵⁰
- the roll forward of the capital asset base occurs in a manner that lowers exposure to cost overruns for capital expenditure
- the cost pass through mechanism allows for certain costs to be passed on to consumers during the access arrangement period, lowering exposure to costs not forecast at the commencement of the access arrangement period.⁶⁵¹
- the access arrangement provides for acceleration of the review submission date on occurrence of a trigger event⁶⁵²
- a service provider may submit an access arrangement variation proposal for the AER's approval.⁶⁵³

While relevant to business specific risks and therefore relevant for consideration of aspects of the regulatory framework other than in applying the CAPM for the benchmark service provider, the submissions made by Jemena about gas networks being riskier than electricity networks do not justify a higher equity beta. As discussed in section 5.9.3, the benchmark gas distribution service provider has the same level of financial leverage as the benchmark electricity business (60 per cent gearing), ensuring that the effect of leverage on equity beta is similar. Further, as outlined above, the reasons put forward to justify a higher equity beta based on the specific business risks of Jemena are not sustained for a market based parameter such as the equity beta.

As outlined, the AER notes that setting a value for the equity beta slightly higher than the empirical estimates is conservative and allows for any uncertainty to account for any volume risk that may influence exposure to systematic risk. For example, setting an equity beta of 0.8 allows a buffer over the empirical estimates of the equity beta from the WACC review (between 0.4 and 0.7).⁶⁵⁴ The AER considers that such a conservative approach ensures that the network service provider has the opportunity to recover at least its efficient costs, in accordance with s. 24(2) of the NGL.

650 NGR, r. 97.

651 NGR, r. 97.

652 NGR, rr. 50–52.

653 NGR, rr. 60–67.

654 This range includes both individual and portfolio equity beta estimates for gas businesses and close comparators considered in the WACC review. The individual estimates (between 0.45 and 0.71) include O. Henry and ACG results using ordinary least squares (OLS) and least absolute deviation (LAD) statistical techniques; see AER, *Φιναλ δεχτισιον: WACC review*, 1 May 2009, pp. 317–318. The preferred portfolio equity beta estimates (between 0.41 and 0.68) include the period post ‘technology bubble’, using both O. Henry and ACG results and both LAD/OLS statistical techniques; see AER, *Φιναλ δεχτισιον: WACC review*, 1 May 2009, pp. 321–324.

Conclusion

The AER considers that the best estimate of the equity beta for a gas distribution service provider, based only on an empirical assessment of market data, is between 0.4 and 0.7.

The AER has also considered other factors, such as the need to reflect prevailing market conditions, the risks involved in providing reference services⁶⁵⁵ and the importance of regulatory certainty. Although reliance on market data suggests a value of between 0.4 and 0.7, the AER concludes that a conservative approach has merit, ensuring that the efficient network service provider has the opportunity to at least recover efficient costs.⁶⁵⁶ Therefore, the AER considers that the value of 0.8 for the equity beta is a best estimate arrived at a reasonable basis⁶⁵⁷ and requires Jemena to amend its access arrangement information as outlined in amendment 5.1.

5.8 Market risk premium

The MRP is the expected return over the risk-free rate that investors require in order to invest in a well diversified portfolio of risky assets. The MRP represents the risk premium investors who invest in such a portfolio can expect to earn for bearing only non-diversifiable (i.e. systematic) risk. The MRP is common to all assets in the economy and is not specific to an individual asset or business.

The MRP is scaled up or down by the equity beta (of a particular asset or business) to reflect the risk premium—over and above the risk-free rate—equity holders would require to hold that particular risky asset or business as part of the investor’s diversified portfolio.⁶⁵⁸

5.8.1 Jemena’s proposal

Jemena proposes a MRP of 6.5 per cent consistent with the AER’s electricity network final WACC decision. Jemena states that this estimate reflects the minimum premium that an efficient gas business needs to compensate for the non-diversifiable risk that is influenced by the current financial and economic crises.⁶⁵⁹

Jemena states that historical based estimates of the MRP, particularly those spanning long time periods, are the most appropriate and relevant proxy for the forward-looking equity risk premium that is taken into account in the CAPM.⁶⁶⁰

5.8.2 Submissions

The EMRF submits the uncertainty about the impact of the global financial crisis (GFC) that existed in April 2009 when the AER in the WACC review decided on a higher MRP of 6.5 per cent than the historical average of 6.0 per cent may have been set on inappropriate assumptions. This is because the Australian economy has been

655 NGR, r. 87(1).

656 NGL, s. 24(2).

657 NGR, r. 74(2).

658 AER, *Final decision: WACC review*, 1 May 2009, p. 175.

659 Jemena, *Access arrangement information*, August 2009, p. 149.

660 Jemena, *Access arrangement information*, August 2009, p. 149.

resilient, and concerns that existed then seem to be dissipating. On this basis it states that an MRP of 6 per cent should be used.⁶⁶¹

5.8.3 AER's analysis and considerations

The MRP is a market wide parameter and it is not specific to any business or industry. The AER considers that the estimation of the MRP for this draft decision should be consistent with the MRP estimated for electricity businesses in the WACC review. Further, the AER considers that the MRP should be estimated based on a 10-year term assumption, consistent with the estimation of the risk-free rate. This is necessary for internal consistency within the WACC estimation.⁶⁶²

Consistent with the WACC review, the AER considers an MRP of 6.5 per cent (above the long-term historical estimate of 6.0 per cent used consistently in regulatory decisions prior to the GFC) is commensurate with prevailing market conditions and the risks involved in providing reference services.⁶⁶³ It also achieves an outcome that is consistent with the NGL⁶⁶⁴ and the NGR.⁶⁶⁵

The AER notes the EMRF submission that the conservatism applied by the AER in its setting of MRP in the WACC review was not necessary and that 6 per cent should be adopted.

The AER considers that prior to the onset of the GFC, an estimate of 6 per cent for the forward looking long-term MRP was the best estimate.⁶⁶⁶ However, following the onset of the GFC, the AER notes the changed market conditions indicate an increase in the MRP, although it does not consider there is sufficient evidence to determine if this is a temporary or permanent change. The AER considers that in either case, given the uncertainty in the future outlook and consistent with its findings in the WACC review, an MRP of 6.5 per cent is appropriate for the purpose of a forward looking estimate commensurate with prevailing market conditions.

The AER considers that an MRP of 6.5 per cent provides the best estimate arrived at on a reasonable basis of the MRP in the prevailing market conditions,⁶⁶⁷ and therefore it accepts Jemena's proposed MRP of 6.5 per cent.

5.9 Gearing ratio

The gearing ratio is defined as the ratio of the value of debt to total capital (i.e. debt and equity), and is used to weight the costs of debt and equity when formulating the WACC. A business' gearing ratio, also referred to as its capital structure, will have a significant bearing on the expected required return on debt and the expected required return on equity.

661 EMRF, *Submission to the AER*, 10 November 2009, pp. 54-55.

662 AER, *Final decision: WACC review*, 1 May 2009, p. 187.

663 AER, *Final decision: WACC review*, 1 May 2009, pp. 175-238.

664 NGL, s. 24(2).

665 NGR, r. 74 and r. 87.

666 AER, *Final decision: WACC review*, 1 May 2009, pp. 175-238.

667 NGR, r. 74(2) and r. 87(1).

5.9.1 Jemena's proposal

Jemena proposes a gearing ratio of 60:40 for the access arrangement period consistent with the assumed efficient level of debt determined by the AER in the WACC review and in the current IPART decision for Jemena.⁶⁶⁸ Jemena submits that this ratio is considered efficient for a stand-alone gas distribution business and is consistent with the proposed figure for the cost of equity and the allowance for debt risk premium.⁶⁶⁹

5.9.2 Submissions

The EMRF submits that the AER's WACC review on parameters such as the gearing ratio represents the best assessment of the value.⁶⁷⁰

5.9.3 AER's analysis and considerations

In theory, the optimal debt to equity ratio is the point at which business value is maximized, where the marginal costs of debt just offset the marginal benefits.⁶⁷¹ However, while an optimal capital structure theoretically exists, the actual optimal value of debt and equity for any given business is dynamic and dependent on a number of business specific factors.

For the purposes of determining the gearing ratio of a benchmark efficient service provider, the AER considers that in the long run businesses trend towards an efficient gearing ratio.

The gearing ratio of a benchmark efficient service provider may also be used:

- to re-lever asset betas for the purposes of analysing the level of systematic risk across businesses, and
- as a factor in determining a credit rating for deriving the debt risk premium.⁶⁷²

The AER considers, based on evidence from the WACC review,⁶⁷³ that gearing of 60 per cent for the benchmark efficient electricity business is supported by the most recent available and reliable empirical evidence. In the WACC review, the AER included gas businesses as close (but not perfect) comparators to a benchmark electricity business. The AER considers that this reasoning also holds in reverse—that is, electricity businesses are close (but not perfect) comparators for the benchmark efficient gas business.⁶⁷⁴ Further, the majority of businesses in the WACC review

668 Jemena, *Access arrangement information*, August 2009, p. 148.

669 Jemena, *Access arrangement information*, August 2009, p. 148.

670 EMRF, *Submission to the AER*, November 2009, p. 57.

671 M. Jensen, 'Agency costs of free cash flow, corporate finance and takeovers,' *American Economic Review*, Vol. 76, No. 2, 1986, pp. 323–329.

672 AER, *Final decision: WACC review*, 1 May 2009, pp. 111–127.

673 AER, *Final decision: WACC review*, 1 May 2009, pp. 121–127.

674 These reasons are detailed further in equity beta (section 5.7) and debt risk premium (section 5.10) of this chapter. See also AER, *Final decision: WACC review*, 1 May 2009, pp. 104–110.

sample were involved in gas networks.⁶⁷⁵ The AER considers that the best estimate arrived at on a reasonable basis⁶⁷⁶ of the gearing level for the benchmark efficient gas business is 60 per cent. This generates a forward looking rate of return that is commensurate with prevailing conditions in the market for funds.⁶⁷⁷

The AER notes that gearing of 60 per cent is consistent with that adopted for a recent gas transmission decision.⁶⁷⁸ This level of gearing has also been applied by the AER in recent draft decisions for gas distribution access arrangements.⁶⁷⁹ Further, the analysis of gearing and its relationship with the credit rating is discussed in section 5.10 of this draft decision.

The AER considers that the gearing of 60 per cent proposed by Jemena is the best estimate arrived at on a reasonable basis⁶⁸⁰ and meets the requirements of r. 87 of the NGR.

5.10 Debt risk premium

The debt risk premium (or debt margin) is added to the nominal risk-free rate to calculate the expected return on debt, which is an input for calculating the WACC. The debt risk premium is the margin above the risk-free rate that investors in a benchmark efficient service provider are likely to require for debt issuance.

5.10.1 Jemena's proposal

Jemena proposes a debt risk premium of 5.04 per cent. This was derived using the April 2009 Tabcorp bond issue with adjustments for certain characteristics of the bond, including conversion from a floating to fixed rate and from a five to a 10-year maturity. A premium was also added to the Tabcorp yield as Jemena also proposes a credit rating of BBB for determining the benchmark cost of debt.⁶⁸¹ Jemena notes that a credit rating of BBB+ has recently been adopted by the AER for electricity distributors and proposes that gas networks are riskier than electricity networks as gas volumes are more uncertain than electricity demand.⁶⁸²

5.10.2 Submissions

The EMRF submits that using a single bond raising is not appropriate as the basis of setting the Jemena debt risk premium. The EMRF supports the approach used by the

675 For the Bloomberg gearing ratio analysis, five out of six businesses were involved in gas networks; for the Standard and Poor's gearing analysis, nine out of eighteen businesses were involved in gas networks. AER, *Final decision: WACC review*, 1 May 2009, pp. 121–127.

676 NGR, r. 74(2).

677 AER, *Final decision: WACC review*, 1 May 2009, p. 126; NGR, r. 87.

678 ACCC, *Final decision: Revised access arrangement by GasNet Australia (Operations) Pty Ltd and GasNet (NSW) Pty Ltd for the principal transmission system*, 30 April 2008, p. 71.

679 AER, *Draft decision, ActewAGL distribution access arrangement proposal 1 July 2010 – 30 June 2015*, November 2009 (AER, *Draft decision: ActewAGL distribution access arrangement proposal*, November 2009) and AER, *Draft decision, Country Energy Access arrangement proposal 1 July 2010 – 30 June 2015*, November 2009 (AER, *Draft decision: Country Energy access arrangement proposal*, November 2009).

680 NGR, r. 74(2).

681 Jemena, *Access arrangement information*, August 2009, pp. 145–146.

682 Jemena, *Access arrangement information*, August 2009, pp. 145–146. 138–139.

AER in developing its decision on the Victorian advanced metering infrastructure roll out review 2009–2011 budget and charges application, released in October 2009.⁶⁸³

On 10 November 2009 Jemena made a submission (10 November 2009 submission) on its access arrangement proposal. It submits that its proposed approach is a second best method once capital markets have returned to normality. Jemena submits that there is insufficient evidence at this stage for it to change the approach to determining the cost of debt in its access arrangement proposal. Jemena notes that it supports a return to the use of Bloomberg fair value curves once normal market conditions have returned.⁶⁸⁴

5.10.3 AER's analysis and considerations

The AER notes that Jemena's proposed method of calculating the benchmark debt risk premium is based on that considered by the AER in its recent decision on the Victorian advanced metering infrastructure review.⁶⁸⁵ The main difference is that Jemena proposes a BBB credit rating, rather than a BBB+ credit rating, for the purposes of deriving the debt risk premium.

The AER's consideration of the debt risk premium must also determine the averaging period, the credit rating, the term to maturity and the data source for the observed bond yields.

Averaging period

As discussed in section 5.6.3, the AER notes that it appears Jemena recognises that a future averaging period is required to determine the debt risk premium.⁶⁸⁶ The AER considers that the same averaging period for estimating the debt risk premium should be used for estimating the risk-free rate in order to maintain consistency in the cost of debt formula. This approach is consistent with accepted practice to determine a benchmark rate of return as required under r. 87 of the NGR, and employs financial information and calculations made, consistently on the same basis.⁶⁸⁷

Credit rating

The issue of which credit rating is appropriate for the benchmark service provider has been recently considered by the AER in the WACC review for electricity distribution and transmission businesses.⁶⁸⁸ In that review, the AER noted a strong precedent for use of a BBB+ credit rating for energy businesses among Australian regulators. The AER also concluded that it should have regard to the outcomes from using median

683 EMRF, *Submission to the AER*, November 2009, pp. 56–57.

684 Jemena Gas Networks (NSW) Ltd, *Submission to the AER consultation on JGN's access arrangement*, 10 November 2009, pp. 4–5.

685 AER, *Victorian advanced metering infrastructure review 2009–11 AMI budget and charges applications*, October 2009, pp. 113–134.

686 Jemena, *Access arrangement information*, August 2009, p. 146.

687 This includes consideration of the factors under r. 73(3) of the NGR, which are relevant to the determination of a benchmark efficient rate of return that is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services in accordance with r. 87 of the NGR.

688 AER, *Final decision: WACC review*, 1 May 2009, pp. 345–392.

credit ratings and the ‘best comparators’ approach in informing its view of the credit rating of a benchmark efficient service provider.⁶⁸⁹

The AER considers that electricity network businesses are sufficiently close comparators to also estimate the credit rating of a benchmark efficient gas network service provider.⁶⁹⁰ As a result, the AER considers that it is appropriate to apply the conclusions of its recent WACC review to both electricity and gas service providers.

In its WACC review, the AER observed a range of credit ratings from BBB+ to A– among the sample of businesses considered. Based on these observations the AER considered that the median approach suggested that the credit rating for a benchmark efficient network service provider may be A–.⁶⁹¹ The AER also considered ElectraNet as the most appropriate ‘best comparator’ business. The AER observed that ElectraNet had a credit rating of BBB+.⁶⁹² The AER therefore concluded that there was not sufficient evidence to depart from the past regulatory practice of using a BBB+ credit rating for energy businesses.⁶⁹³ The AER considers that this conclusion remains valid.

Further, the AER considers that Jemena has not appropriately accounted for multi-parameter considerations in proposing a BBB credit rating. Jemena has proposed a gearing ratio of 60:40. The AER’s analysis and consideration of this aspect of Jemena’s proposal is set out in section 5.9.3 of this draft decision. The AER considers that the assumed 60:40 gearing ratio needs to be considered in conjunction with the credit rating for determining the cost of debt. Specifically, all things being equal, higher gearing ratios should be associated with lower credit ratings.

The AER considers that Jemena has not properly taken this relationship into account in its proposal. In past decisions, the AER has determined a 60:40 gearing ratio and a credit rating of BBB+ for a benchmark efficient network service provider. However, Jemena has proposed a 60:40 gearing ratio, which has been accepted by the AER, and a credit rating of BBB. The AER considers that, for consistency, if Jemena proposes a 60:40 gearing ratio, then a credit rating higher than BBB should apply.

After considering these factors the AER concludes that electricity network businesses are sufficiently close comparators for the purpose of determining the credit rating of a benchmark efficient gas network service provider and that there is not sufficient evidence to depart from the past regulatory practice of using a BBB+ credit rating for energy businesses particularly in circumstances where the proposed gearing ratio is 60:40, which is accepted by the AER.

Term to maturity

Jemena’s proposed method for estimating the debt risk premium is based on a 10-year maturity and it attempts to convert the 5-year maturity of the Tabcorp bond issue to

689 AER, *Final decision: WACC review*, 1 May 2009, pp. 347, 360.

690 AER, *Final decision: WACC review*, 1 May 2009, p. 379.

691 AER, *Final decision: WACC review*, 1 May 2009, p. 384.

692 AER, *Final decision: WACC review*, 1 May 2009, p. 386.

693 AER, *Final decision: WACC review*, 1 May 2009, p. 391.

reflect a 10-year maturity.⁶⁹⁴ While the AER considers a 10-year maturity is appropriate, as it matches the term used to determine the risk-free rate, the AER does not consider the Tabcorp bond issue is an appropriate basis to estimate the debt risk premium, as discussed below. The use of a 10-year maturity approach also ensures consistency in the calculation of the WACC.⁶⁹⁵

The Tabcorp bond issue and fair value curves

The AER notes that Jemena's proposal to use the Tabcorp bond issue to determine the debt risk premium relies on a report submitted by the Victorian electricity distribution businesses (Victorian electricity DNSPs report) which has previously been considered by the AER.⁶⁹⁶ The AER further notes that much of the material of this report is specific to the revised Victorian order in council for advanced metering infrastructure, which requires the use of a known historical averaging period, and the national electricity law and rules. This material does not directly apply to the current decision making process for a gas distribution access arrangement.

Jemena proposes a debt risk premium of 5.04 per cent, based on the Tabcorp 5-year BBB+ rated floating bond issue of April 2009. The AER notes that the Tabcorp bond:

- was issued on 1 April 2009
- is a five year bond, whereas the AER considers the benchmark corporate bond rate is based on a maturity of ten years
- is a variable rate bond, whereas the debt risk premium is to be measured by reference to Commonwealth government securities, which are fixed coupon bonds.

The AER notes that Jemena has attempted to make adjustments to the yield of the Tabcorp bond in order to make it more representative of the benchmark corporate bond.⁶⁹⁷ Jemena proposes to convert the variable rate to a fixed rate and to add a premium to the observed yield to reflect a 10-year maturity.⁶⁹⁸ However, the AER considers that it is more appropriate to find a measure of the debt risk premium which more closely matches the characteristics of the benchmark corporate bond rather than to make adjustments to the Tabcorp bond yield as proposed by Jemena.

The AER is of the view that it is not appropriate to use the Tabcorp bond issued in April 2009 to derive the benchmark debt risk premium since it is only a single bond and it requires several adjustments to make it comparable to the benchmark corporate bond. As a result, the AER must consider methods of determining the debt risk premium other than using the Tabcorp bond issue.

694 Jemena, *Access arrangement information*, August 2009, appendix 9.2: Victorian electricity distribution businesses, *Debt risk premium for use in the initial AMI WACC period*, 1 June 2009, pp. 28–29.

695 NGR, 73(3).

696 AER, *Victorian advanced metering infrastructure review 2009–11 AMI budget and charges applications*, October 2009, pp. 113–134.

697 Jemena, *Access arrangement information*, August 2009, p. 146.

698 Jemena, *Access arrangement information*, August 2009, p. 146.

In previous regulatory decisions the AER has used the fair value curves published by Bloomberg or CBASpectrum to determine the benchmark corporate bond rate. The AER considers that the benchmark corporate bond rate should be estimated based on the observed yields of all bonds suitable for inclusion rather than a single bond. The AER notes the EMRF's concern that using a single bond issue is not appropriate as the basis for setting the debt risk premium.⁶⁹⁹ As such, the AER considers that the relevant test of whether the fair values sourced from Bloomberg or CBASpectrum are fit for purpose is how they compare to the observable yields of corporate bonds with a fixed coupon rate issued in the Australian market.

The AER notes, however, that in the Victorian electricity DNSPs report which forms part of Jemena's proposed access arrangement information, concern was expressed that the fair value curves published by Bloomberg appear to be underpricing observed yields in the Australian corporate bond market.⁷⁰⁰ The AER notes that the analysis in the Victorian electricity DNSPs report shows the Bloomberg BBB fair value curve to be below:

- the CBASpectrum BBB+ fair value curve
- the yield on BBB corporate bonds as published by the RBA
- the US BBB/BBB+ corporate bonds swapped to Australian dollars
- selected bonds issued in the US by Australian companies swapped to Australian dollars
- the Tabcorp bond issued in April 2009.

The AER considers that it is not unexpected that the fair values published by Bloomberg were lower than the yields published by CBASpectrum and the RBA because Bloomberg excludes outliers in the derivation of its fair values for bonds.

The AER does not consider it appropriate to compare the Bloomberg fair values of Australian bonds against the yields of international bonds. Market conditions will vary between the Australian bond market and the US bond market and it is expected that converting US market data into Australian dollars will not entirely remove the differences in prevailing conditions in each market for funds.⁷⁰¹

In the 10 November 2009 submission, Jemena reaffirms the position in its proposal. Jemena submits that there is insufficient evidence to change from its proposed approach to determining the cost of debt.⁷⁰²

699 EMRF, *Submission to the AER*, November 2009, pp. 56–57.

700 Jemena, *Access arrangement information*, August 2009, appendix 9.2: Victorian electricity distribution businesses, *Debt risk premium for use in the initial AMI WACC period*, 1 June 2009, p. 10.

701 NGR, r. 87(1).

702 Jemena Gas Networks (NSW) Ltd, *Submission to the AER consultation on JGN's access arrangement*, 10 November 2009, pp. 4–5.

The AER notes that in the Victorian electricity DNSPs report, analysis is undertaken which compares Bloomberg's fair value curve to observed bond yields. The AER considers that the conclusions that can be drawn from the analysis are limited as the analysis presented is for one day only, i.e., 17 November 2008.⁷⁰³ The AER considers that analysis of a single day's data is not sufficient to conclude that Bloomberg's or CBASpectrum's fair values are unsuitable for determining the benchmark debt risk premium for an Australian corporate bond.

In recent decisions, the AER has examined estimates derived from both Bloomberg and CBASpectrum's fair value curves when compared to observed bond yields. The AER considers that analysing the performance of the fair value estimates is appropriate for compliance with r. 87 of the NGR, which requires that the rate of return is to be commensurate with prevailing conditions in the market for funds, which are determined through observation of market data.

The analysis is conducted by first defining a population of fixed interest corporate bonds to observe, then selecting a sample from this population. Yields are then observed for the sample of bonds from Bloomberg, CBASpectrum and UBS. Bloomberg's, CBASpectrum's and an average of the two fair value estimates are then compared to the observed yields to determine which fair value estimate more closely aligns with the observed yields.

The Australian Competition Tribunal (Tribunal) recently considered the AER's methodology for comparing Bloomberg and CBASpectrum's fair value curves and found there was no compelling case for departing from the AER's methodology.⁷⁰⁴ The Tribunal also found that the AER will need to reconsider the data sources and methodology.

As part of its analysis of the debt risk premium, the AER recently considered its methodology and used updated data in the draft decisions for the ActewAGL and Country Energy gas access arrangements.⁷⁰⁵ In this analysis, CBASpectrum's BBB+ fair value curve performed better than both Bloomberg's BBB fair value curve and an average of the two at matching observed yields for the sample of bonds. This is true whether the source of the observed bond yields was Bloomberg, CBASpectrum or UBS. Consistent with the ActewAGL and Country Energy draft decisions, the AER uses CBASpectrum's fair value curve to determine the benchmark debt risk premium for this draft decision. For the final decision, the AER will update this analysis for the averaging period that has been stated in confidential Appendix B.

Conclusion

For the reasons given above and as outlined in the WACC review, the AER considers that the benchmark efficient service provider has a credit rating of BBB+ and issues debt with a maturity of ten years. In determining how to estimate the efficient

703 Jemena, *Access arrangement information*, August 2009, appendix 9.2: Victorian electricity distribution businesses, *Debt risk premium for use in the initial AMI WACC period*, 1 June 2009, pp. 14–16.

704 Australian Competition Tribunal, *Application by Energy Australia and other* [2009] ACompT8, November 2009, p. 39.

705 AER, *Draft decision: ActewAGL distribution access arrangement proposal*, November 2009 and AER, *Draft decision: County Energy access arrangement proposal*, November 2009.

benchmark cost of this debt, and therefore the debt risk premium, the AER considers that it is not appropriate to rely on a single debt issue such as the April 2009 Tabcorp bond issue but to instead use CBASpectrum's BBB+ fair value curve for this draft decision.

The reason for selecting CBASpectrum's fair value curve for this draft decision reflects the outcomes of the AER's analysis where it compared CBASpectrum's BBB+ fair value curve to Bloomberg's BBB fair value curve and an average of the two, which found that CBASpectrum's fair value estimates are more closely aligned to observed yields. There is a reasonable basis to consider that using CBASpectrum's BBB+ fair value curve results in the best estimate possible in the circumstances, providing a debt risk premium commensurate with prevailing market conditions and the risks of providing reference services as required by r. 74(2) of the NGR.

For the purposes of the draft decision, the debt risk premium was calculated by averaging over the 20 business days between 26 November and 23 December 2009 (to match the period used for the risk-free rate). The resulting debt risk premium is 4.18 per cent. Adding this debt risk premium to the risk-free rate of 5.52 per cent provides a return on debt of 9.70 per cent. Therefore, the AER requires Jemena to amend its access arrangement information as outlined in amendment 5.1 for the return on debt.

For the final decision, the AER will update the debt risk premium based on the same averaging period as the risk-free rate.

5.11 Inflation forecast

The expected inflation rate is not an explicit parameter within the WACC calculation. However, it is used in the revenue model to forecast nominal allowed revenues and to index the capital base. It is an implicit component of the nominal risk-free rate, with implications for the return on both equity and debt.

5.11.1 Jemena's proposal

Jemena proposes an inflation forecast of 2.38 per cent. The forecast inflation is the geometric average of the forecast annual inflation for each of the ten years from 2010 to 2019. Jemena's ten year average inflation forecast is based on the RBA's short-term (two years) inflation forecasts and the mid-point of the RBA's long-term target inflation band for the subsequent eight years.⁷⁰⁶ Jemena states that this approach is consistent with the AER's approach in the recent determinations for NSW and ACT electricity distributors.⁷⁰⁷

5.11.2 AER's analysis and considerations

The AER has determined in previous regulatory decisions that a method likely to result in the best estimate arrived at on a reasonable basis⁷⁰⁸ of inflation over a ten year period is to apply the RBA's short-term inflation forecasts extending out for two

706 Jemena, *Access arrangement information*, August 2009, p. 148.

707 Jemena, *Access arrangement information*, August 2009, p. 148.

708 NGR, r. 74(2).

years and the mid-point of the RBA's target inflation band beyond that period (i.e. 2.5 per cent) for the remaining eight years.⁷⁰⁹ An implied ten year inflation forecast is derived by averaging these individual forecasts. The AER considers that this approach remains appropriate⁷¹⁰ and provides the best estimate of expected inflation arrived at on a reasonable basis.⁷¹¹

The AER notes that Jemena has used this approach in its proposal for estimating expected inflation.⁷¹² However, Jemena has used the ten year forecast period from 2010 to 2019.⁷¹³ The AER considers that the ten year forecast period should be from 2010–2011 to 2019–2020 because actual inflation data will be available for the period ending 30 June 2010 and the ten year forecast should therefore start from 1 July 2010 (i.e. for the financial year 2010–2011). This is consistent with the start of the access arrangement period.

The RBA's statement on monetary policy examines a wide variety of objective data influencing inflation in both the domestic and international financial markets to develop its inflation forecast. The forecast is produced on a regular basis and is publicly available, including supporting analysis and reasoning.⁷¹⁴ Use of the RBA's statement on monetary policy provides consistency and transparency in the AER methodology for deriving an inflation forecast.

The AER also considers that the estimate of expected inflation should be updated to incorporate the latest available data closer to the time of the final determination. Inflation forecasts can change in line with market sensitive data and regulatory practice in Australia has been to update these forecast values at the time of making a decision.⁷¹⁵ The AER will update its estimate of inflation based on the latest RBA forecasts as close as is practical to the date of the final decision.

709 AER, *Final decision: ACT distribution determination*, April 2009, pp. 105–107; AER, *Final decision: NSW distribution determination*, April 2009, pp. 233–237.

710 For a full explanation of the AER's methodology, see AER, *Final decision: NSW distribution determination*, April 2009, p. 236; AER, *Final decision: ACT distribution determination*, April 2009, p. 105.

711 A market based approach to forecast inflation is to use CGS yields and indexed CGS yields under the Fisher transformation. The AER notes the concern with using this implied inflation method is because, at this point in time, the yields from indexed CGS are likely to be unreliable due to the limited supply of these securities. However, given the resumption of issuance of indexed CGS by the Australian Office of Financial Management in October 2009, the AER will closely monitor developments in capital markets to determine the effect of this new issuance on the relative demand and supply for indexed CGS. Australian Office of Financial Management, *Operation notice 21/2009: Treasury indexed bonds – Launch of new 2025 treasury indexed bond*, 29 September 2009, viewed 13 October 2009, <http://www.aofm.gov.au/content/notices/21_2009.asp> and Australian Office of Financial Management, *Operation Notice 23/2009: Pricing of new 2025 treasury indexed bond*, 30 September 2009, viewed 13 October 2009, <http://www.aofm.gov.au/content/notices/23_2009.asp>.

712 Jemena, *Access arrangement information*, August 2009, p. 148.

713 Jemena, *Access arrangement information*, August 2009, p. 148.

714 RBA, *Statement on monetary policy*, 6 November 2009, viewed 9 November 2009, <<http://www.rba.gov.au/PublicationsAndResearch/StatementsOnMonetaryPolicy/Statements/statement-on-monetary-0809.pdf>>

715 AER, *Final decision: ACT distribution determination*, April 2009, pp. 105–107; AER, *Final decision: NSW distribution determination*, April 2009, pp. 233–237.

The AER considers that the best estimate, arrived at on a reasonable basis,⁷¹⁶ of the ten year inflation forecast is a geometric average of the RBA short-term forecasts (currently extending out two years) and the mid-point of the RBA's target inflation range for the remaining years in the ten year period.⁷¹⁷ Based on this approach and using the latest RBA forecasts, an inflation forecast of 2.47 per cent produces the best estimate for a ten year period for this draft decision.⁷¹⁸

Table 5.6 shows the calculation of the inflation forecast for the access arrangement period using the RBA data.

Table 5.6: AER's inflation forecasts (%)

	June 2011	June 2012	June 2013	June 2014	June 2015	June 2016	June 2017	June 2018	June 2019	June 2020	Geometric average
Forecast inflation	2.25a	2.50a	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.47a

Source: RBA, *Statement on monetary policy*, 6 November 2009, p. 72.

a: This forecast will be updated by the AER to incorporate the latest available data from the RBA statement of monetary policy closer to the time of the final decision.

5.12 Summary

Jemena proposes the use of a pre-taxation nominal WACC to determine the rate of return, including the use of the FFM to establish the return on equity. Jemena's proposed WACC parameters results in a nominal vanilla WACC of 11.21 per cent. For this draft decision, the AER has estimated a nominal vanilla WACC of 10.11 per cent for Jemena. The WACC is less than that proposed by Jemena due to the use of the Sharpe–Lintner CAPM for estimating the return on equity instead of the FFM and the amendments required to parameters such as the nominal risk-free rate, equity beta and debt risk premium.

Table 5.7 outlines the WACC parameter values for the draft decision. The AER's final decision will update the nominal risk-free rate and debt risk premium (and all values that depend on these parameters), based on the averaging period closer to the final decision date as stated in confidential Appendix B. The AER's final decision will also update the inflation rate as outlined earlier in this chapter.

5.13 Conclusion

The AER does not propose approve the rate of return on capital proposed by Jemena as it does not comply with r. 87 of the NGR and requires Jemena to make the amendments set out below:

716 NGR, r. 74(2).

717 The current RBA forecasts are available at <www.rba.gov.au>. The current target inflation band is between 2 and 3 per cent per annum, see Treasurer and the Governor of the Reserve Bank of Australia, Joint statement on the conduct of monetary policy, 6 December 2007, viewed 5 November 2009, <http://www.rba.gov.au/MonetaryPolicy/statement_conduct_mp_4_06122007.html>.

718 The AER notes that this will be updated to incorporate the latest available data from the RBA at the time of the final decision.

5.14 Amendments required to the access arrangement proposal

Amendment 5.1: amend the access arrangement information to delete Tables 9-1 and 9-4 and replace them with the following:

Table 5.7: WACC parameters

Parameter	AER's draft decision
Nominal risk-free rate (%)	5.52 ^a
Inflation (%)	2.47 ^b
Real risk-free rate (%)	2.98 ^a
Equity beta	0.80
Market risk premium (%)	6.50
Debt risk premium (%)	4.32 ^a
Debt to total assets (gearing) (%)	60
Nominal return on equity (%)	10.72 ^a
Nominal return on debt (%)	9.84
Nominal vanilla WACC (%)	10.19 ^a
Gamma (utilisation of imputation credits)	0.65 ^c

- a: These figures have been updated with data current to 23 December 2009, but should be considered indicative only. They will be updated by the AER for the final decision (in accordance with the averaging period set out in confidential Appendix B).
- b: This figure will be updated by the AER for the final decision using the latest data from the RBA statement of monetary policy.
- c: Gamma (utilisation of imputation credits) is considered in taxation chapter 6.

Amendment 5.2: make all consequential amendments necessary in the access arrangement information to take account of and reflect amendment 5.1.

6 Taxation

6.1 Introduction

This chapter sets out Jemena's proposed approach to establish an allowance for taxation and the AER's analysis and consideration of Jemena's proposed approach for the access arrangement period. This includes the assumed utilisation of imputation credits (γ). The rate of utilisation of imputation credits affects the cost of taxation for the service provider.

6.2 Regulatory requirements

Rule 72(1)(h) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the proposed method for dealing with taxation, and a demonstration of how the allowance for taxation is calculated.

Rule 76(c) of the NGR provides for the estimated cost of corporate taxation as a building block for total revenue insofar as this is applicable.

6.3 Jemena's proposal

Jemena proposes using a pre-taxation framework to estimate total revenue. The pre-taxation framework includes the estimated cost of taxation in the weighted average cost of capital (WACC). This is consistent with the framework used in the earlier access arrangement period.⁷¹⁹

Jemena proposes a γ value of 0.2 based on reports by Synergies Economic Consulting (Synergies) and Strategic Finance Group Consulting (SFG). Jemena also states that there is a theoretical argument supporting a γ value of zero.⁷²⁰

Jemena submits that the AER's conclusions in the WACC review about the value of imputation credits in the hands of investors and the payout ratio are incorrect and do not meet the requirements of the NGR.⁷²¹

6.4 Submissions

Jemena submits reports, which were originally commissioned by ETSA utilities for its recent electricity distribution determination regulatory proposal, to support its proposed γ value of 0.2.⁷²²

In particular Jemena submits reports from Gilbert and Tobin and Emeritus Professor Robert Officer,⁷²³ which outline the position that the imputation credit payout ratio

719 Jemena, *Access arrangement information*, August 2009, p. 138.

720 Jemena, *Access arrangement information*, August 2009, pp. 149–151.

721 Jemena, *Access arrangement information*, August 2009, p. 151.

722 Jemena, *Submission to the AER consultation on JGN's access arrangement*, 10 November 2009, pp. 2–3 (Jemena, *Submission to the AER*, 10 November 2009).

723 Officer R., *Estimating the distribution rate of imputation tax credits: Questions raised by ETSA's advisers, Report prepared for ETSA Utilities*, 23 June 2009 and Gilbert and Tobin, *Review of WACC parameters: Gamma—ETSA price reset*, 22 June 2009.

should be less than the 100 per cent adopted in the WACC review. Jemena also submits two reports from Associate Professor Christopher Skeels:

- the first report states that the AER’s method for estimating theta in the WACC review, based on an average of estimates from taxation statistics and a dividend drop-off study, was inappropriate⁷²⁴
- the second report is a review of a dividend drop-off study prepared by SFG for the Joint Industry Associations’ (JIA) submission to the WACC review, which was updated in response to the AER’s concerns outlined in the WACC review final decision.⁷²⁵

These reports are discussed in more detail below.

The Energy Markets Reform Forum (EMRF) submits that WACC parameters—other than the MRP and equity beta—developed by the AER in the WACC review represent the best assessment of the value and applicability of parameters carried out in recent times. The EMRF submits that on this basis, it supports the use the WACC parameters determined in the WACC review.⁷²⁶

6.5 AER’s analysis and considerations

6.5.1 Comparing pre-taxation and post-taxation frameworks

Jemena proposes a pre-taxation framework to estimate total revenue. This framework does not use a taxation building block but, instead, incorporates a taxation variable (the effective taxation rate) into the WACC to account for the costs of corporate income taxation. The value of the pre-taxation WACC is higher than the value of the nominal vanilla WACC and so allows Jemena to recover the costs of taxation without using an explicit taxation building block. If the effective taxation rate is accurately estimated then the two approaches will produce an equivalent present value of revenues.

Jemena estimates its effective taxation rate by first determining the cost of corporate income taxation using the same method applied to calculate the taxation building block in the AER’s post-taxation revenue model (PTRM).⁷²⁷ The effective taxation rate is then calculated using the following formula:

$$\text{Effective taxation rate (\%)} = 1 - \left[\frac{\text{IRR}(\text{Post - taxation cash flows to equity})}{\text{IRR}(\text{Pre - taxation cash flows to equity})} \right]$$

724 Skeels C., *Estimation of gamma*, 18 June 2009.

725 Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009. The AER notes that the SFG study reviewed by Skeels comprises two reports—SFG, *The impact of franking credits on the cost of capital of Australian firms*, 2008 and an updated report SFG, *The value of imputation credits as implied by the methodology of Beggs and Skeels (2006)*, 2009.

726 EMRF, *NSW gas distribution revenue reset: Jemena application—a response by the Energy Markets Reform Forum*, November 2009, p. 57.

727 Jemena, *Access arrangement information*, August 2009, pp. 151–152.

where IRR is the internal rate of return.⁷²⁸

In the PTRM framework the effective taxation rate is derived from the cash flow modelling and does not determine revenues.

Pre-taxation cash flows to equity are equal to nominal revenue less operating expenses, capital expenses, interest payments and repayment of debt. Post-taxation cash flows to equity are simply pre-taxation cash flows to equity less any estimated taxation expenses.⁷²⁹ Jemena proposes that these taxation expenses include interest or debt servicing, taxation depreciation allowances and taxation operating expenses.⁷³⁰ Jemena estimates its effective taxation rate as 28.35 per cent.⁷³¹

In general, if correctly estimated, the taxation compensation using a post-taxation revenue framework and a pre-taxation framework should be identical in terms of present value. However, after reviewing Jemena's implementation of the pre-taxation framework, the AER has two concerns. First, that incorrect assumptions about future capital expenditure have been made and, second, that the estimation of the opening taxation asset base is inconsistent with Jemena's past approach to taxation. The AER considers that both of these factors lead to an overestimation of the effective taxation rate.

6.5.2 Estimation of the effective taxation rate

Jemena's estimates its proposed effective taxation rate by analysing cash flows over a 70 year period. However the capital expenditure forecast used in the analysis is for only five years.⁷³² This means that Jemena is analysing taxation rates for an aging capital base which will have a relatively high effective taxation rate. The AER considers that it is likely that future capital expenditure will offset the aging of the capital base and produce a lower effective taxation rate. The AER considers that to determine an effective taxation rate consistent with the NGR⁷³³ a forecast of capital expenditure would be required for the 70 years analysed by Jemena.⁷³⁴ That said, the AER considers that a key limitation of Jemena's proposed approach to taxation is that neither the AER nor Jemena is able to forecast capital expenditure on a reasonable basis over such long periods of time.⁷³⁵

For illustrative purposes, if a 70 year forecast of capital expenditure were used with capital expenditure remaining constant at its current average levels, then Jemena's effective taxation rate would be around 25.87 per cent, not 28.35 per cent as proposed by Jemena.⁷³⁶

728 Jemena, *Access arrangement information – appendix 9.3*, 26 August 2009, p. 3.

729 Jemena, *Access arrangement information – appendix 9.3*, 26 August 2009, p. 3.

730 Jemena, *Access arrangement information – appendix 9.3*, 26 August 2009, p. 3.

731 Jemena, *Access arrangement information*, August 2009, p. 138.

732 Jemena, *Regulatory Model*, August 2009.

733 NGR, r. 74(2).

734 Jemena, *Regulatory Model*, August 2009.

735 NGR, r. 74(2)(a).

736 Jemena, *Access arrangement information*, August 2009, p. 151.

The AER therefore considers that a pre-taxation approach is more complicated than a post-taxation approach but does not produce a better estimate than the post-taxation approach. Practically, the proposed pre-taxation approach adds complexity but may, over the life of the asset, not provide for the best estimate of the cost of taxation from one access arrangement period to another.⁷³⁷

6.5.3 Taxation asset base

The AER's second concern is that the estimation of the opening taxation asset base is inconsistent with Jemena's past approach to estimating taxation. The transition to either a post-taxation framework or the estimation of an effective taxation rate requires a taxation asset base to be established. Under a post-taxation framework the taxation asset base is an input to determining the taxation allowance. This is because taxation depreciation is estimated based on the taxation asset base and taxation depreciation is treated as an expense for taxation purposes. In a pre-taxation framework the taxation asset base is used to derive the effective taxation rate which is used to determine the WACC. The derivation of the effective taxation rate requires an estimate of the cost of taxation and the taxation asset base is an input to estimating the cost of taxation.

Jemena has not previously estimated an effective rate of taxation for the purpose of determining its pre-taxation WACC. Previously, the IPART used the corporate taxation rate as a proxy for the effective taxation rate. This means that Jemena has not maintained a taxation asset base for regulatory purposes.⁷³⁸ For the current access arrangement period Jemena proposes to establish its taxation asset base as at 1 July 1999.⁷³⁹ This date was selected as it is the date on which the initial capital base was set by the IPART.⁷⁴⁰ Jemena proposes to roll this taxation asset base forward to 1 July 2010 based on actual and forecast capital expenditure and disposals.⁷⁴¹ The roll forward value of the taxation asset base is shown in Table 6.1 This allows for the estimation of the opening taxation asset values for the access arrangement period. Jemena proposes to estimate taxation depreciation using the diminishing value approach.⁷⁴² The AER notes that the diminishing value approach to calculating taxation depreciation is accepted by the Australian Taxation Office (ATO).⁷⁴³ The AER has considered that the capital expenditure used in the roll forward of the taxation asset base is consistent with the capital expenditure used in the roll forward of the regulatory asset base.

737 NGR, r. 74(2)(b).

738 Jemena, *Access arrangement information – appendix 9.3*, 26 August 2009.

739 Jemena, *Access arrangement information – appendix 9.3*, 26 August 2009.

740 Jemena, *email response to the AER follow up questions, attachment 1*, 20 October 2009, p. 6 and IPART, *Final decision - Access Arrangement for AGL Gas Networks Limited Natural Gas System in NSW*, July 2000, pp. 71–88.

741 Jemena, *Access arrangement information – appendix 9.3*, 26 August 2009, p. 7.

742 Jemena, *Access arrangement information – appendix 9.3*, 26 August 2009, p. 5.

743 ATO, *A guide to depreciating assets*, 2009, p. 6.

Table 6.1: Taxation asset base roll forward summary (\$m, nominal)

	Value as at		
	1 July 1999	30 June 2010	30 June 2015
Trunk Wilton–Sydney	0.5	0.1	2.7
Trunk Sydney–Newcastle	1.4	0.4	8.8
Trunk Wilton–Wollongong	0.1	0.0	0.7
Contract meters	4.0	4.7	3.7
Fixed plant – distribution	0.9	32.0	49.7
High pressure mains	19.0	96.6	171.0
High pressure services	0.5	0.2	0.7
Medium pressure mains	211.0	129.2	161.5
Medium pressure services	80.7	166.6	295.1
Meter reading devices	0.5	12.5	8.6
Country packaged off-take station (POTS)	1.2	2.4	17.5
Tariff meters	37.7	122.8	261.2
Building	4.3	2.8	2.5
Computers	12.6	1.1	na ^a
Software	10.8	11.3	na ^a
Fixed plant	10.3	5.1	3.0
Furniture	3.6	1.1	0.4
Land	6.4	4.6	4.6
Leasehold improvements	5.5	10.4	10.0
Low value assets	-	0.0	0.0
Mobile plant	2.8	1.6	1.7
Vehicles	7.7	7.8	18.7
Total	421.5	613.6	1110.4 ^b

Source: Jemena, *Access arrangement information – Appendix 9.3*, 26 August 2009, pp. 6–9.

a: These two figures were not provided in Jemena’s access arrangement proposal.

b: The figures shown in this column sum to 1022.1 due to the omission of amounts for computers and software.

The AER considers that a uniform taxation rate over different access arrangement periods necessarily implies the use of a straight line depreciation method. Therefore, the use of a diminishing value approach to calculating Jemena's past taxation depreciation allowance is not consistent with the use of the corporate taxation rate in earlier access arrangement periods. The use of the diminishing value methodology to determine depreciation will produce an unreasonably low value for the taxation asset base and consequentially overstate Jemena's future effective taxation rate. The opening taxation asset base is therefore not derived on a reasonable basis as required by r. 74(2)(a) of the NGR and it is not the best estimate possible in the circumstances as required by r. 74(2)(b) of the NGR. The AER requires Jemena to re-estimate its opening taxation asset base on the assumption that assets were depreciated on a straight line basis over their economic lives. This does not preclude Jemena from adopting a diminishing value assumption for determining its cost of corporate income taxation in the access arrangement period.

6.5.4 Assumed utilisation of imputation credits (gamma)

Under the Australian imputation taxation system, domestic investors receive a credit for taxation paid at the company level (an 'imputation credit') that offsets part or all of their personal income taxation liabilities. For eligible shareholders, imputation credits represent a benefit from the investment in addition to any cash dividend or capital gains received.⁷⁴⁴

Gamma is a measure of the value of imputation credits and is defined as a product of the 'imputation credit payout ratio' (payout ratio) and the 'utilisation rate' (theta).⁷⁴⁵ Under the post-taxation framework, adjustments for taxation are made in the cash flows—that is, gamma is used as one component to determine the taxation building block.

The AER has considered the information provided by Jemena in the access arrangement information and in its submission⁷⁴⁶ in the context of the following issues:

- the payout ratio
- the utilisation rate (theta), based on taxation statistics and dividend drop-off studies
- reasonable ranges and estimates of gamma.

The AER notes that in the WACC review, gamma was estimated as a market wide parameter for the Australian economy. The AER considers that the same approach is appropriate for the purposes of this access arrangement review. The AER considers that the findings of the WACC review are relevant to the AER's analysis and considerations in relation to gamma in the context of this decision.

744 Although foreign investors do not pay Australian personal income taxes, they may receive a credit for company taxation paid from their home country government, depending on the inter-country taxation arrangements.

745 This is the Monkhouse definition. See AER, *Final decision: WACC review*, 1 May 2009, p. xix.

746 Jemena, *Submission to the AER*, 10 November 2009.

The payout ratio

The AER adopted a payout ratio of 100 per cent in the WACC review. This was based on the following considerations:

- advice from Associate Professor Handley that a 100 per cent payout ratio is consistent with the Officer WACC framework,⁷⁴⁷ which makes a perpetuity assumption for simplicity⁷⁴⁸
- a reasonable estimate of the payout ratio—taking into account retention of imputation credits—is between 91 and 98 per cent. This estimated range assumes that 29 per cent of imputation credits are retained (a distribution rate of 71 per cent), a retention period for imputation credits of between one and five years and a discount rate for retained imputation credits between the risk-free rate and the cost of equity.⁷⁴⁹

Jemena submits that an appropriate estimate of the payout ratio is 66 per cent, based on a recent report by Synergies.⁷⁵⁰ Jemena submits that the report prepared by Synergies uses taxation statistics from the ATO for the period 2003 to 2007, which results in an estimated range of 58 to 77 per cent for the payout ratio.⁷⁵¹ Jemena has not provided the report prepared by Synergies as part of its proposal. The AER notes that this report was originally commissioned by Ergon Energy and Energex and reviewed by the AER in the Queensland electricity distribution determination draft decision (Queensland draft decision), where the AER raised substantial concerns about its reliability.⁷⁵²

Jemena also submits reports from Emeritus Professor Officer and Gilbert and Tobin to support its proposed payout ratio of 66 per cent.⁷⁵³ In particular, the report prepared by Emeritus Professor Officer states that an assumption of a 100 per cent payout ratio is inconsistent with long-term averages of the economy wide distribution rate of about 70 per cent and that listed companies rarely exceed this rate. The report prepared by Emeritus Professor Officer states that this implies that at least 30 per cent of credits generated have no value.⁷⁵⁴

The AER recently considered the issues raised by Emeritus Professor Officer in the South Australian electricity distribution determination draft decision (South Australian draft decision). In the South Australian draft decision the AER noted that the Officer WACC framework is a perpetuity framework (as a simplifying

747 The Officer WACC framework is set out in Officer R., 'The cost of capital of a company under an imputation tax system', *Accounting and Finance*, vol. 34, May 1994.

748 AER, *Final decision: WACC review*, 1 May 2009, p. 466.

749 AER, *Final decision: WACC review*, 1 May 2009, p. 466.

750 Jemena, *Access arrangement information*, August 2009, p. 151.

751 Jemena, *Access arrangement information*, August 2009, p. 151.

752 AER, *Draft decision: Queensland electricity distribution determination*, 25 November 2009, pp. 205–212.

753 Officer R., *Estimating the distribution rate of imputation tax credits: Questions raised by ETSA's advisers, Report prepared for ETSA Utilities*, 23 June 2009 and Gilbert and Tobin, *Review of WACC parameters: Gamma—ETSA price reset*, 22 June 2009.

754 Officer R., *Estimating the distribution rate of imputation tax credits: Questions raised by ETSA's advisers, Report prepared for ETSA Utilities*, 23 June 2009, p. 4.

assumption) which assumes no growth and the full distribution of cash flows at the end of each period. The AER accepted the advice of Associate Professor Handley and noted that it would be inconsistent to assume that there is a full distribution of a service provider's free cash flow but not a full distribution of the imputation credits associated with that free cash flow.⁷⁵⁵

In the South Australian draft decision, the AER also noted Associate Professor Handley's advice that an assumption of a 100 per cent payout ratio is consistent with standard classical taxation system valuation frameworks. In relation to retained imputation credits, the AER considered that it is unreasonable to assume that the current \$150 billion in accumulated franking credits have no value.⁷⁵⁶

Consistent with the South Australian draft decision, the AER considers that the assumption of a zero value for retained imputation credits is inconsistent with the Officer WACC framework, which utilises a perpetuity model incorporating simplifying assumptions.

Distribution of retained imputation credits

Jemena submits a report from Gilbert and Tobin that outlines a number of limitations on a company's ability to distribute retained imputation credits. In particular, the report prepared by Gilbert and Tobin notes that:

- the income taxation law presents significant impediments to full, effective distribution of franking credits, and that the 'wastage' of credits is an apparent design feature of the imputation system. Furthermore, the Treasury has in the past shown a readiness to not only adopt further specific measures to prevent taxation avoidance schemes (such as dividend streaming), but to also do so retrospectively.
- commercial imperatives mean that companies may not be in a position to fully distribute all of their retained franking credits. A reduction in retained earnings will alter a company's capital structure, and could have significant implications for a company's ability to raise further capital.
- there are a number of provisions in the taxation rules which limit the ability of a company to stream dividends and to distribute imputation credits to certain shareholders—that is, foreign shareholders.
- with respect to investors' incentives and the balance of franked dividends, companies need to consider shareholder preferences and share distribution policies, capital requirements, periods of negative profits where it will be unable to distribute dividends and the value of imputation credits from acquired businesses.⁷⁵⁷

The AER considers that it is difficult to predict what innovative financial schemes a company may develop to distribute imputation credits. Furthermore, the AER

755 AER, *Draft decision: South Australian electricity distribution determination*, 25 November 2009, p. 256.

756 AER, *Draft decision: South Australian electricity distribution determination*, 25 November 2009, p. 256.

757 Gilbert and Tobin, *Review of WACC parameters: Gamma—ETSA price reset*, 22 June 2009.

considers that estimating how the Australian Government, the Commonwealth Treasury or the ATO might respond to such schemes and the impact on the payout ratio would be a highly complex and costly process, without significant additional benefit. Therefore, the AER does not consider it appropriate to adjust the payout ratio to take into account potential distribution schemes and the Australian Governments potential response to such schemes.

The AER notes that the report by Gilbert and Tobin incorrectly applies the issue of wastage of imputation credits to the estimation of the payout ratio. It notes the Explanatory Memorandum to the *New Business Tax System (Imputation) Act 2002*, which states:⁷⁵⁸

A consequence of generally spreading imputation benefits evenly across members is that members who cannot use, or cannot fully use, imputation benefits will nevertheless receive franked distributions. This results in the 'wastage' of those benefits, which is a design feature of the imputation system.

This apparent design feature noted in the Explanatory Memorandum relates to wastage through the presence of classes of foreign shareholders who cannot redeem imputation credits and therefore relates to the estimation of the utilisation rate. This apparent design feature noted in the explanatory memorandum does not assume a reduced payout ratio.

The AER considers that gamma should be estimated on a market wide basis and company specific considerations, such as shareholder preferences and share distribution policies, should not be taken into account in determining a value for the payout ratio as an input to gamma.

The AER noted in the WACC review that companies may be able to distribute retained imputation credits is through the use of a dividend reinvestment plan.⁷⁵⁹ Distributing retained imputation credits in this way would both increase equity and release retained imputation credits to shareholders. This would avoid any adverse effects on a company's capital structure, which may hinder a company's ability to raise capital.

Reduction in the value of retained imputation credits

The report prepared by Emeritus Professor Officer, which is submitted by Jemena states:

- if imputation credits are not redeemed at the time they are created, the 'time value' of the cash redemption they represent is reduced and the Officer WACC framework did not address this issue, as the framework assumed perpetuities
- in considering the lower time value of retained credits, these credits are tied to equity cash flows and therefore the appropriate discount rate is the cost of equity

758 Gilbert and Tobin, *Review of WACC parameters: Gamma—ETSA price reset*, 22 June 2009, p. 3.

759 AER, *Final decision: WACC review*, 1 May 2009, p. 418.

- the Officer WACC framework does not address the issue of a variable distribution and is consistent with an immediate or full payout of earnings or a delayed payment.⁷⁶⁰

The lower time value of retained imputation credits was addressed in the WACC review. Based on a reasonable set of assumptions, the AER estimated the payout ratio to be 91 to 98 per cent after taking into account the potential lower time value of retained imputation credits.⁷⁶¹ The AER also noted earlier advice from Associate Professor Handley that the additional analysis required to take into account the time value loss of retained imputation credits is costly. It involves the estimation of three additional parameters and the AER does not consider that the additional benefits of taking into account time value loss will outweigh the extra cost of undertaking such analysis.⁷⁶²

In recent advice provided to the AER in relation to the value of retained imputation credits, Associate Professor Handley noted that in order to analyse highly complex issues, sometimes simplifying assumptions are used in theoretical models to gain a better understanding of the workings of financial markets.⁷⁶³ Therefore the AER considers it appropriate to adopt a 100 per cent payout ratio, consistent with the Officer WACC framework.

The utilisation rate

Use of taxation statistics to infer theta

Jemena proposes a gamma value of 0.2 based on a range of 0 to 0.23.⁷⁶⁴ Jemena relies on a recent report by Synergies to set the upper end of this range. Jemena submits that the report prepared by Synergies estimates gamma to be 0.23 based on a value for theta of 0.35 and a payout ratio of 66 per cent using taxation statistics from the ATO for the period 2003 to 2007.⁷⁶⁵

The report prepared by Synergies was reviewed by the AER in the Queensland draft decision, in which the AER noted significant issues with the approach taken by Synergies to estimating theta.⁷⁶⁶ In particular, the AER noted that the figures Synergies obtained from taxation statistics do not take into account potential double counting of franked dividends, which arises due to complex corporate structures where dividends are paid through multiple entities.⁷⁶⁷ The report prepared by

760 Officer R., *Estimating the distribution rate of imputation tax credits: Questions raised by ETSA's advisers, Report prepared for ETSA Utilities*, 23 June 2009, pp. 2, 5–6.

761 AER, *Final decision: WACC review*, pp. 414–420.

762 AER, *Final decision: WACC review*, pp. 414–415.

763 AER, *Draft decision: South Australian electricity distribution determination*, 25 November 2009, pp. 255–256, 260.

764 Jemena, *Access arrangement information*, August 2005, p. 151.

765 Jemena, *Access arrangement information*, August 2005, p. 150.

766 AER, *Draft decision: Queensland electricity distribution determination*, 25 November 2009, pp. 208, 211.

767 AER, *Draft decision: Queensland electricity distribution determination*, 25 November 2009, p. 211.

Synergies also excludes non-residents from its analysis. However, some non-residents can claim credits due to inter-country arrangements.⁷⁶⁸

Due to these issues, the AER does not consider that the report prepared by Synergies provides a reliable estimate of theta based on taxation statistics. The AER considers that the 2008 Handley and Maheswaran study used in the WACC Review provides more relevant and reliable estimates of theta from taxation statistics in the post-July 2000 period.⁷⁶⁹ The AER considers that 0.74 is a reasonable estimate of theta from taxation statistics as derived from the mid-point of the range 0.67 to 0.81 estimated in the 2008 Handley and Maheswaran study.⁷⁷⁰

Use of dividend drop-off studies to estimate theta

Jemena submits that dividend drop-off studies provide the most reliable and accurate method for estimating theta. Jemena submits that the February 2009 SFG dividend drop-off study, considered in the WACC review, estimates the value of theta to be between 0.2 and 0.35. Jemena submits that the February 2009 SFG study⁷⁷¹ is more comprehensive than the 2006 Beggs and Skeels study that the AER used to estimate gamma in the WACC review because it uses a much larger cross-section of businesses and a longer, more recent data period.⁷⁷²

Jemena notes that in the WACC review, after correcting for perceived deficiencies in the February 2009 SFG study, the AER found that the February 2009 SFG study suggests a theta of between 0.23 and 0.47.⁷⁷³ The AER notes that, amongst other concerns regarding the February 2009 SFG study, this range was considered to be highly variable and for this reason the AER placed limited weight on the February 2009 SFG study in the WACC review.⁷⁷⁴

In the WACC review, the AER considered that a reasonable and reliable estimate of theta inferred from market prices is 0.57 based on a 2006 dividend drop-off study by Beggs and Skeels.⁷⁷⁵ The AER noted that:

- dividend drop-off studies are likely to suffer from multi-collinearity, which makes it difficult to separate the value investors place on cash dividends and the value investors place on imputation credits⁷⁷⁶

768 AER, *Draft decision: Queensland electricity distribution determination*, 25 November 2009, p. 211.

769 AER, *Final decision: WACC review*, 1 May 2009, pp. 448.

770 AER, *Final decision: WACC review*, 1 May 2009, p. 455.

771 The SFG dividend drop-off study was first completed in 2008 for the JIA as part of its submission to the WACC review. The study was updated in February 2009 following the AER's explanatory statement on the WACC review. The SFG study was updated again in May 2009, following the AER's final decision on the WACC review. The results of the May 2009 SFG study are presented in Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009.

772 Jemena, *Access arrangement information*, August 2009, p. 150.

773 Jemena, *Access arrangement information*, August 2009, p. 150.

774 AER, *Final decision: WACC review*, 1 May 2009, p. 441.

775 AER, *Final decision: WACC review*, 1 May 2009, p. 466.

776 AER, *Final decision: WACC review*, 1 May 2009, p. 437.

- there are concerns about the reliability of the February 2009 SFG dividend drop-off study.⁷⁷⁷

Jemena submits a report by Associate Professor Skeels that reviews the SFG study (Skeels report on the SFG studies), in support of its proposed gamma value of 0.2.⁷⁷⁸ The Skeels report on the SFG studies compares the original 2008 SFG study and the updated 2009 SFG study (together the SFG studies), with the 2006 Beggs and Skeels study, examines the findings of the WACC review in relation to the February 2009 SFG study, and provides further information and updated estimates from the May 2009 SFG study. The Skeels report on the SFG study concludes that the May 2009 SFG study, which estimates a theta of 0.23 is an empirically valid dividend drop-off study that represents the most accurate estimate of theta currently available.⁷⁷⁹

Comparison between the 2006 Beggs and Skeels study, and the SFG studies

The Skeels report on the SFG studies notes:

- theta estimates of 0.52 in the 2008 SFG study and 0.57 in the 2006 Beggs and Skeels study for the period 1 July 2000 to 10 May 2004 are very similar. The small differences may be due to a scaling factor used by Beggs and Skeels but not by SFG⁷⁸⁰
- the 2008 SFG study uses a larger sample (additional data from 10 May 2004 to 30 September 2006), which would be expected to better reflect true population values⁷⁸¹
- estimates from the two studies between 1 July 1999 to 30 June 2000 are notably different and this difference is unlikely to be explained by the scaling factor. However, this sub-sample is relatively small in size⁷⁸²
- the 2006 Beggs and Skeels study employed filters that excluded observations based on shortcomings in the data or where the observations were unreliable on economic grounds. The Skeels report on the SFG study could not definitively state that the larger sample size in the May 2009 SFG study is due to the inclusion of more information or more unreliable observations compared to the 2006 Beggs and Skeels study⁷⁸³
- the February 2009 SFG study states that the 2006 Beggs and Skeels study's results are driven by outliers or influential observations. However, this cannot be known as SFG does not know whether or not the influential observations excluded from

777 AER, *Final decision: WACC review*, 1 May 2009, pp. 438–441, 466.

778 Jemena, *Submission to the AER consultation on JGN's access arrangement*, 10 November 2009, p. 3.

779 Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009, pp. 3–5.

780 The 2006 Beggs and Skeels study scaled ex-dividend share prices by one plus the return on the All Ordinaries Index to take account of the overall movement in the share market.

781 Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009, pp. 8, 10–11, 13.

782 Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009, pp. 8, 10–11, 13.

783 Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009, pp. 8, 10–11, 13.

the 2008 SFG study were part of the data used in the 2006 Beggs and Skeels study.⁷⁸⁴

The AER notes that the Skeels report on the SFG studies states that the estimated theta of 0.52 from the 2008 SFG study is similar to the 0.57 estimate from the 2006 Beggs and Skeels study and the minor difference in the estimates may be due to scaling. However, the Skeels report on the SFG studies does not highlight the large differences between the standard errors using the same sampling period. For example, the standard error of the 2006 Beggs and Skeels study for the 1 July 2000 to 10 May 2004 subsample is 0.12 compared to 0.54 in the 2008 SFG study (the standard error of the 2008 SFG study is approximately 4.5 times larger). This suggests that the estimates in the 2008 SFG study do not have the same statistical confidence as the 2006 Beggs and Skeels study.

The AER also notes that the 0.52 theta estimate from the 2008 SFG study is from the unfiltered sample. SFG's preferred theta estimate from the 2008 SFG study (that excludes observations on the basis of Cook's D statistic) is 0.19 with an associated standard error of 0.136. This estimate is markedly different from the 0.57 theta estimate from the 2006 Beggs and Skeels study.⁷⁸⁵

The Skeels report on the SFG studies suggests that using more data observations is generally likely to result in estimates which better reflect the true population. However, the 2008 SFG study, which uses more observations than the 2006 Beggs and Skeels study, does not employ the same filtering techniques or data source as used in the 2006 Beggs and Skeels study, making it difficult to assess the reliability of the data used in each of the studies. Therefore, the AER can only make general observations about the estimation results, such as differences between the standard errors. As noted above, the 2008 SFG study produces results with either high standard errors or significantly different results to the 2006 Beggs and Skeels study.

Examination of the AER's findings

The Skeels report on the SFG studies examines the findings of the WACC review and states that:

- as stated by the AER, theta estimates are highly sensitive to the sample selected
- as concluded by the AER, the 2008 SFG study did not account for the noise in the data set by adjusting the daily observed ex-dividend share price for the aggregate movement in the market⁷⁸⁶ but the impact (from not scaling) is likely to be immaterial
- multi-collinearity was not a problem in the 2008 SFG because the estimated coefficient for the cash dividend is statistically different from zero

784 Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009, pp. 8, 10–11, 13.

785 This preferred estimate of theta uses Cook's D statistic to exclude one per cent of influential observations.

786 This is required to separate the movement in the stock price on the ex dividend date from the general movement in the market.

- larger sample sizes are more likely to accurately reflect the population even if the sample has a higher standard deviations then so be it
- the differences in filtering and exclusion techniques between the SFG study and the 2006 Beggs and Skeels study are likely to be immaterial
- the filtering and sample selection issues in the SFG study are potentially important, even though the AER has not considered these issues.⁷⁸⁷

The AER has examined the estimation outputs provided in the Skeels report on the SFG studies, which compares theta estimates from the 2006 Beggs and Skeels study, the 2008 SFG study and the May 2009 SFG study as shown in Table 6.2.

Table 6.2: Comparison of dividend drop-off samples from Skeels report on SFG studies

Estimation period	Beggs and Skeels (2006)			2008 SFG study			May 2009 SFG study (excluding 20 contaminated points)		
	Cash	Franking	No.	Cash	Franking	No.	Cash	Franking	No.
1 July 2000 to 10 May 2004	0.800	0.572	1310	0.895	0.526	1389	1.015	0.129	1386
	(0.052)	(0.121)		(0.227)	(0.541)		(0.038)	(0.106)	

Source: Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009, pp. 10, 35.

The AER notes that in the May 2009 SFG study, the standard error for the estimated coefficient of cash dividends has fallen from 0.227 to 0.038 and the standard error for the estimated coefficient of franking credits has fallen from 0.541 to 0.106 compared to the 2008 SFG study. However, the estimated coefficients have changed substantially with a dollar of cash dividends being valued at greater than a dollar and the value of franking credits decreasing from 0.526 to 0.129.

The AER notes that results where the coefficient of cash dividends exceeds one dollar are economically implausible and therefore cannot be relied upon.⁷⁸⁸ Furthermore, it is questionable that the SFG studies have a similar sample size to the 2006 Beggs and Skeels study but produce significantly different results (either by having high standard errors or completely different coefficients).

The AER also compares the estimates using the preferred approach of 2006 Beggs and Skeels study and the SFG studies at each point in time and notes significantly different results as shown in Table 6.3.

⁷⁸⁷ Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009, pp. 15–17, 19 and 22–24.

⁷⁸⁸ This is because one dollar of cash dividends cannot be more valuable than one dollar at the time the cash dividend is valued.

Table 6.3: Comparison of dividend drop-off sub-samples using preferred approaches

Estimation period	Beggs and Skeels (2006)			2008 SFG study			May 2009 SFG study (excluding 20 contaminated points)		
	Cash	Franking	No.	Cash	Franking	No.	Cash	Franking	No.
1 July 2000 to	0.800	0.572	1310	0.945	0.190	1378	1.015	0.129	1386
10 May 2004	(0.052)	(0.121)		(0.059)	(0.136)		(0.038)	(0.106)	

Source: Skeels C., *A review of the SFG dividend drop-off study*, 28 August 2009, pp. 10, 35.

The AER examines the data and statistical program codes underlying the May 2009 SFG study, and considers:

- SFG has not conducted any tests to examine the extent of multi-collinearity. This is particularly important as the variability in the estimation results between the 2008 SFG study and the May 2009 SFG study may be due to the presence of multi-collinearity. The AER has also previously noted that dividend drop-off studies are likely to be affected by multi-collinearity, given the high correlation between cash dividends and the associated franking credits⁷⁸⁹
- concerns about the amount of filtering applied to the data used in the SFG studies. The AER considers that the 2006 Beggs and Skeels study uses a more rigorous approach to filtering outlier observations.

The AER notes that the May 2009 SFG study results reported in the Skeels report on the SFG studies aim to address a number of the AER's concerns identified in the WACC review, but does not address all of the AER's concerns. In particular, the May 2009 SFG study produces the outcome that each dollar of cash dividend is valued at greater than one dollar to a shareholder. The AER also has significant concerns regarding the rigour of the filtering technique used in the May 2009 SFG study. The AER maintains its conclusion that the 0.57 estimate of theta from the 2006 Beggs and Skeels study is the most reliable estimate of theta inferred from market prices.

Reasonable ranges and estimates of gamma

In the WACC review, the AER concluded that a reasonable range for theta estimated from taxation statistics based on the 2008 Handley and Maheswaran study is 0.67 to 0.81 for the post-2000 period.⁷⁹⁰ The AER selected the mid-point of this range to determine a point estimate for theta of 0.74 and referred to this estimate as an 'upper bound' of reasonable estimates.⁷⁹¹ The AER also concluded that a reasonable and reliable estimate of theta inferred from market prices is 0.57 from the published 2006

789 AER, *Final decision: WACC review*, 1 May 2009, p. 437.

790 AER, *Final decision: WACC review*, 1 May 2009, p. 456.

791 AER, *Final decision: WACC review*, 1 May 2009, p. 466–467.

Beggs and Skeels dividend drop-off study.⁷⁹² The AER referred to this point estimate as a ‘lower bound’ of reasonable estimates.⁷⁹³

The AER took an average of these point estimates for theta and adopted a payout ratio of 100 per cent, which resulted in a gamma estimate of 0.65 (rounding to the nearest 0.05).⁷⁹⁴

Jemena submits a report from Skeels on the estimation of gamma (Skeels report on the estimation of gamma) to support its proposed value for gamma of 0.2. The Skeels report on the estimation of gamma outlines that:

- it is not reasonable to treat the 2006 Beggs and Skeels estimate as a lower bound on gamma
- there is no justification for the AER’s proposed gamma of 0.65 obtained by averaging the 2006 Beggs and Skeels and the 2008 Handley and Maheswaran estimates (as the AER ignores the uncertainty inherent in the estimates)
- the AER’s proposed estimation of gamma is upwardly biased.⁷⁹⁵

The AER acknowledges the use of terminology in the WACC review labelling the 2006 Beggs and Skeels study’s estimate as a ‘lower bound’ may be inappropriate and was not intended to carry meaning in the statistical sense (for example, establishing a confidence interval). However, the AER does not consider that it is appropriate to use a gamma point estimate of 0.2 based on the Synergies report’s theta estimate of 0.35 and payout ratio estimate of 66 per cent, as proposed by Jemena.⁷⁹⁶ In particular the AER has concerns about the reliability of the Synergies report as discussed above.

With respect to the Skeels report on the estimation of gamma, which made claims about bias, the AER notes that the Skeels report on the estimation of gamma conducted statistical tests on a value (0.74), which was selected as mid-point of estimates from the taxation statistics study (0.67 to 0.81). It appears that the Skeels report on the estimation of gamma uses the average utilisation rate from each year of the sample period reported in the 2008 Handley and Maheswaran study. It also appears to limit its analysis to the data reported for funds, rather than the whole sample that includes individuals and non-residents.⁷⁹⁷ The AER also notes that the Skeels report on the estimation of gamma appears to apply standard deviations to calculate the confidence intervals of the sample mean. However, the appropriate measure to determine a confidence interval for a sample mean is the standard error (which is the standard deviation divided by the square root of the sample size), not the standard deviation. Therefore, the AER considers the confidence intervals used in the

792 AER, *Final decision: WACC review*, 1 May 2009, pp. 445–446.

793 AER, *Final decision: WACC review*, 1 May 2009, p. 467.

794 AER, *Final decision: WACC review*, 1 May 2009, p. 468.

795 Skeels C., *Estimation of gamma*, 18 June 2009, p. 2.

796 Jemena, *Access arrangement information*, August 2009, p. 151.

797 Handley and Maheswaran, ‘A measure of the efficacy of the Australian Imputation System’, *The Economic Record*, vol. 84, no. 264, March 2008, p. 90.

Skells report are incorrect and cannot be relied on to determine whether the 0.65 gamma estimate from the WACC review is upwardly biased.

The AER notes that the WACC review adopted an approach that used several point estimates, which recognises limitations of the underlying methodology of each approach. The AER considers that the point estimates and means from taxation statistics and dividend drop-off studies are likely to have the highest probability of reflecting the actual population values. The 0.65 gamma estimate from the WACC review gives equal weight to the most reliable estimates from dividend drop-off studies and taxation statistics currently available. On this basis, the AER considers that the best estimate of gamma arrived at on a reasonable basis in the circumstances is 0.65.⁷⁹⁸

6.5.5 Summary

For the reasons outlined above, the AER considers that the post-taxation approach is preferable to Jemena's proposed pre-taxation framework to account for taxation.⁷⁹⁹ The post-taxation approach is consistent with r. 76(c) of the NGR. Further, the AER considers that the opening taxation asset base estimate has not been made consistently with assumptions about the effective taxation rate in earlier access arrangement periods.

The AER considers that as part of the post-taxation framework, Jemena should incorporate a value for gamma in calculating a taxation building block. The AER considers that the best estimate of gamma arrived at on a reasonable basis is 0.65.⁸⁰⁰ This is consistent with the estimate of gamma determined in the WACC review and the recent Queensland draft decision and the recent South Australian draft decision. The AER also considers that this estimate is supported by the most recent available and reliable empirical evidence and provides a rate of return that is commensurate with prevailing conditions in the market for funds and the risks involved in providing reference services.⁸⁰¹

6.6 Conclusion

The AER does not propose to approve the approach to establishing a taxation allowance and opening taxation asset base proposed by Jemena as they do not comply with r. 89(1)(d) of the NGR. The AER requires Jemena to make the amendments set out below.

The AER does not propose to approve the gamma proposed by Jemena as it does not comply with r. 87(1) of the NGR. The AER requires Jemena to make the amendments set out below.

798 NGR, r. 74 (2).

799 NGR, r. 40(3).

800 NGR, r. 74.

801 NGR, r. 87.

6.7 Amendments required to the access arrangement proposal

Before the proposed access arrangement can be approved, Jemena must make the following amendments:

Amendment 6.1: amend the access arrangement information to delete the third, fourth and fifth paragraphs from section 9.4 and replace them with the following:

JGN determines its building block revenue requirement using a post-taxation approach. It is therefore necessary to itemise "the estimated cost of corporate income taxation for [each] year" as a separate revenue building block consistent with rule 76(c).

Amendment 6.2: amend section 9.4 in the access arrangement information to include a discussion of the estimation of the taxation building block, i.e. using a post-taxation framework, including a reference to appendix 9.3 of the access arrangement information.

Amendment 6.3: amend the access arrangement information to delete section 9.6.1 and replace it with the following:

JGN proposes using a nominal vanilla WACC as follows:

$$\text{WACC} = R_d^n \times \frac{D}{V} + R_e^n \times \frac{E}{V}$$

where:

R_d^n is the nominal return on debt

R_e^n is the nominal return on equity

D is total debt

E is total equity

V is $(D + E)$, i.e. total debt plus total equity.

Amendment 6.4: amend the access arrangement information to delete section 9.7.8.

Amendment 6.5: amend the access arrangement information to change the title of appendix 9.3 to "Taxation asset base".

Amendment 6.6: amend the access arrangement information to delete section 1 and the introduction to section 2 in appendix 9.3.

Amendment 6.7: amend the access arrangement information to delete the third dot point in section 2.2 in appendix 9.3 and replace it with the following:

to determine the taxation written down value of each asset and hence the opening TAB for the regulatory capital base assets as at 1 July 1999. Where the taxation regime offered the option of prime cost (historic cost straight

line) or diminishing value depreciation, JGN has used the prime cost method. The prime cost method was used to ensure consistency with approaches to taxation in past access arrangement periods.

Amendment 6.8: amend the access arrangement information to delete Table 2-1 in appendix 9.3 and replace it with the following, after calculating the initial taxation life and remaining taxation life:

Table 2-1: JGN's opening TAB as at 1 July 1999 (\$nominal)

Asset Class	Initial cost	Initial taxation life (years)	Remaining taxation life (years)	Cumulative taxation depreciation to 1 July 1999	TAB 30 June 1999
Trunk Wilton–Sydney	65.5			65.3	0.2
Trunk Sydney–Newcastle	84.0			77.3	6.7
Trunk Wilton–Wollongong	13.2			13.2	0.0
Contract meters	9.1			4.5	4.6
Fixed plant – distribution	23.0			20.0	3.0
High pressure mains	239.4			201.6	37.8
High pressure services	3.7			2.7	1.0
Medium pressure mains	1143.8			739.0	404.8
Medium pressure services	348.0			199.8	148.3
Meter reading devices	1.1			0.5	0.6
Country POTS	4.2			2.5	1.8
Tariff meters	115.2			60.7	54.5
Building	4.1			0.5	3.7
Computers	16.5			4.3	12.2
Software	28.9			20.1	8.7

Fixed plant	19.9	13.2	6.7
Furniture	7.1	5.0	2.1
Land	4.8	0.0	4.8
Leasehold improvements	5.6	0.1	5.5
Low value assets	0.0	0.0	0.0
Mobile plant	5.5	3.5	2.0
Vehicles	15.0	9.2	5.8
Current building	1.0	0.5	0.5
Current land	1.7	0.0	1.7
Total	2160.3	1443.4	716.9

Amendment 6.9: amend the access arrangement information to delete Table 2-2 in appendix 9.3 and replace it with the following:

Table 2-2: TAB roll forward from 1999–2010 (\$nominal)

Asset Class	TAB 1 July 1999	Depreciation	Net Expenditure	TAB 30 June 2010
Trunk Wilton–Sydney	0.2	0.2	0.1	0.1
Trunk Sydney–Newcastle	6.7	6.7	0.3	0.3
Trunk Wilton–Wollongong	0.0	0.0	0.0	0.0
Contract meters	4.6	7.2	7.2	4.6
Fixed plant – distribution	3.0	6.8	19.2	15.5
High pressure mains	37.8	44.5	32.3	25.5
High pressure services	1.0	1.1	0.3	0.2
Medium pressure mains	404.8	439.5	105.1	70.4
Medium pressure services	148.3	203.2	167.1	112.2
Meter reading devices	0.6	1.8	3.4	2.2
Country POTS	1.8	2.0	2.6	2.4
Tariff meters	54.5	89.3	118.3	83.6
Building	4.2	1.2	–0.4	2.5

Computers	12.2	13.5	1.4	0.0
Software	8.7	15.9	13.4	6.2
Fixed plant	6.7	10.2	5.0	1.5
Furniture	2.1	2.3	0.1	0.0
Land	6.4	0.0	-1.9	4.6
Leasehold improvements	5.5	1.9	1.3	5.0
Low value assets	0.0	0.1	0.1	0.0
Mobile plant	2.0	2.5	1.0	0.5
Vehicles	5.8	20.8	16.5	1.5
Total	716.9	870.6	492.5	338.7

Amendment 6.10: amend the access arrangement information to delete Table 2-3 in appendix 9.3 and replace it with the following:

Table 2-3: TAB roll forward from 2011–15 (\$nominal)

Asset Class	TAB 1 July 2010	Depreciation	Net Expenditure	TAB 30 June 2015
Trunk Wilton–Sydney	0.1	0.5	2.6	2.2
Trunk Sydney–Newcastle	0.3	0.6	2.7	2.4
Trunk Wilton–Wollongong	0.0	0.0	0.0	0.0
Contract meters	4.6	2.0	0.8	3.3
Fixed plant – distribution	15.5	8.8	12.7	19.4
High pressure mains	25.5	15.7	21.9	31.8
High pressure services	0.2	0.2	0.6	0.6
Medium pressure mains	70.4	46.5	97.1	121.0
Medium pressure services	112.2	81.3	192.9	223.8
Meter reading devices	2.2	1.1	1.4	2.4
Country POTS	2.4	2.0	6.0	6.4
Tariff meters	83.6	61.9	160.2	181.9
Building	2.5	0.3	0.0	2.2

Computers	0.0	0.0	0.0	0.0
Software	6.2	27.3	89.9	68.8
Fixed plant	1.5	1.8	1.9	1.7
Furniture	0.0	0.0	0.0	0.0
Land	4.6	0.0	0.0	4.6
Leasehold improvements	5.0	0.6	0.0	4.4
Low value assets	0.0	0.0	0.0	0.0
Mobile plant	0.5	0.5	0.6	0.6
Vehicles	1.5	3.4	8.7	6.8
Total	338.7	254.4	600.1	684.5

Amendment 6.11: amend the access arrangement information to delete Table 2-4 in appendix 9.3 and replace it with the following:

Table 2-4: Roll forward of TAB from 2011-15 (\$nominal)

	2010–11	2011–12	2012–13	2013–14	2014–15
Opening balance	338.7	402.9	468.8	535.5	610.2
Add net capital expenditure	109.0	116.1	118.7	128.1	128.2
Less depreciation	44.9	50.1	52.0	53.4	54.0
Closing balance	402.9	468.8	535.5	610.2	684.5

Amendment 6.12: amend the access arrangement information to delete all references to a gamma value of 0.2 and replace them with 0.65.

Amendment 6.13: make all consequential amendments necessary to take account of and reflect amendments 6.1 to 6.12 including updating modelling inputs and calculations.

7 Incentive mechanism

7.1 Introduction

This chapter sets out Jemena's proposed incentive mechanism and the AER's analysis and consideration of the mechanism.

7.2 Regulatory requirements

Rule 72(1)(i) of the NGR provides that the access arrangement information for a full access arrangement proposal must, if an incentive mechanism operated for the previous access arrangement period, include the proposed carry over of increments for efficiency gains or decrements for efficiency losses in the previous access arrangement period and a demonstration of how allowance is to be made for any such increments or decrements. Rule 72(1)(l) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the service provider's rationale for any proposed incentive mechanism.

Rule 98(1) of the NGR provides that a full access arrangement may include (and the AER may require it to include) one or more incentive mechanisms to encourage efficiency in the provision of services by the service provider. Rule 98(2) of the NGR provides that an incentive mechanism may provide for carrying over increments for efficiency gains and decrements for losses of efficiency from one access arrangement period to the next. Rule 98(3) of the NGR provides that an incentive mechanism must be consistent with the revenue and pricing principles.

7.3 Jemena's proposal

Jemena proposes a 'market expansion' incentive mechanism for the access arrangement period.⁸⁰² Jemena submits that capital investment for network expansion into unreticulated areas is added to a speculative investment fund and, if it is assessed by the AER to be conforming, not rolled into the capital base until five years after the commencement of the specific reticulation project. Jemena submits that this mechanism creates an incentive to expand the network into unreticulated areas. Jemena proposes that such network expansion contributes to lower average prices for all customers in the long run.⁸⁰³

7.4 Submissions

The Energy User's Association of Australia (EUAA) submits it would support Jemena's proposed new incentive mechanism if it results in more efficient investment in the network and is consistent with cost reflective tariff pricing principles. The EUAA also outlines the pre-existing incentives to minimise expenditure and maximise demand that exist under the NGR. The EUAA further outlines the incentive to overstate capital expenditure forecasts.⁸⁰⁴

802 Jemena, *Access arrangement information*, August 2009, pp. 161–163.

803 Jemena, *Access arrangement information*, August 2009, pp. 161–163.

804 EUAA, *Submission to the AER on Jemena Gas Networks' Access Arrangement proposal 2010/11–2014/15*, 10 November 2009, p. 16.

The Energy Markets Reform Forum (EMRF) submits it supports the introduction of customer related service performance targets that relate to events such as responsiveness to customer needs, scheduled outages and wrongful disconnections.⁸⁰⁵

7.5 AER's analysis and considerations

The AER considers that increasing the number of potential gas customers by expanding the network into previously unreticulated areas may lead to an overall decrease in costs for all users, but this may only benefit some users. However, the AER considers that the proposed incentive mechanism does not comply with r. 84(3) or r. 98(1) of the NGR.

Rule 84(3) of the NGR sets out that certain amounts in the speculative capital expenditure account are to be rolled into the capital base as at the commencement of the next access arrangement period. In contrast, Jemena's proposed incentive mechanism requires certain amounts of the speculative capital expenditure to be rolled into the capital base five years after the commencement of the specific reticulation project⁸⁰⁶ and not at the commencement of the next access arrangement period which is inconsistent with r. 84(3) of the NGR.

Further, r. 84(1) of the NGR requires capital expenditure to be rolled into the speculative capital expenditure account, to the extent that it is not recovered as a surcharge passed through to users or a capital contribution. As Jemena is proposing to charge an amount for the services provided into previously unreticulated areas, the AER is concerned that the proposal does not make it clear what the nature of these charges are and how they will be characterised. If these charges are akin to surcharges or capital contributions, these amounts cannot be added to the speculative capital expenditure account as this is inconsistent with r. 84(1) of the NGR.⁸⁰⁷

The AER also considers that Jemena's proposed incentive mechanism is not an incentive mechanism for the purpose of r. 98 of the NGR. This is because r. 98(1) of the NGR requires that an incentive mechanism should encourage efficiency in the provision of services. Jemena's proposed incentive mechanism is designed to provide a greater incentive for capital expenditure but not to encourage efficiency in the provision of services as is required by r. 98(1) of the NGR.

The AER further notes that the NGR provides a number of means for Jemena to recover the costs of expanding its network into unreticulated areas. The AER considers that the weighted average cost of capital (WACC) provides a return commensurate with prevailing market conditions and the risks involved in providing reference services and so should adequately compensate the service provider for such reticulation projects.⁸⁰⁸ The NGR also provides other methods to recover the costs of such projects including capital contributions and surcharges.⁸⁰⁹ Finally, the NGR

805 EMRF, *NSW gas distribution revenue reset Jemena application a response by the Energy Markets Reform Forum*, November 2009, p. 47.

806 Jemena, *Access arrangement information*, August 2009, pp. 161–163.

807 NGR, r. 84(1).

808 NGR, r. 87.

809 NGR, r. 82, NGR, r. 83.

provides methods to manage the return on specific capital expenditure programs through the depreciation schedule and the division of customers into tariff classes.⁸¹⁰

In regard to EMRF's submission, for the AER to consider a mechanism such as that supported by EMRF the mechanism would need to first be proposed by Jemena and second meet the requirements set out in r. 98 of the NGR. It is also important to note that, in contrast to the National Electricity Rules (NER), the NGR does not specifically outline a mechanism such as the service target performance incentive scheme which is supported by EMRF.⁸¹¹

7.6 Conclusion

The AER does not propose to approve the incentive mechanism proposed by Jemena as it does not comply with r. 84(3) or r. 98(1) of the NGR and requires Jemena to make the amendments set out below.

7.7 Amendments required to the access arrangement proposal

Before the proposed access arrangement can be approved, Jemena must make the following amendments:

Amendment 7.1: amend the access arrangement proposal to delete section 4.2 titled 'Expansion incentive mechanism.'

Amendment 7.2: amend the access arrangement information to:

- delete the fourth bullet point in the introduction to chapter 11
- delete the second paragraph in section 11.1
- delete section 11.4
- delete and replace the term 'Section 11.4' with 'N/A' in Table 11-1.

810 NGR, r. 89, NGR, r. 94.

811 NER, clause 6.6.2.

8 Fixed principles

8.1 Introduction

This chapter sets out Jemena's proposal and the AER's analysis and consideration of Jemena's proposed fixed principles. A fixed principle sets out aspects of the access arrangement which do not change for a stated period of time. A fixed principle can extend over two or more access arrangement periods. Fixed principles approved by the AER are binding on the AER and the service provider for the period for which the principles are fixed.

8.2 Regulatory requirements

Rule 99 of the NGR provides that:

- a full access arrangement may include a principle declared to be fixed for a stated period⁸¹²
- a principle may be fixed for a period extending over two or more access arrangement periods⁸¹³
- a fixed principle approved before the commencement of the NGR, or approved by the AER under the NGR, is binding on the AER and the service provider for the period for which the principle is fixed⁸¹⁴
- the AER may vary or revoke a fixed principle at any time with the service provider's consent. If a rule of the NGR is inconsistent with a fixed principle, the rule operates to the exclusion of the fixed principle.⁸¹⁵

8.3 Jemena's proposal

Relying on rule 99 of the NGR, Jemena proposes to include three fixed principles for the access arrangement period and the next access arrangement period.

Jemena did not have any fixed principles for the earlier access arrangement period.

Jemena proposes the following fixed principles in the access arrangement proposal:

- the AER must notify Jemena no later than 18 months prior to the revision commencement date if it intends to revoke the direction requiring the consolidation of the access arrangements for its four covered pipelines. Jemena proposes that this fixed principle applies for the access arrangement period⁸¹⁶

812 NGR, r. 99(1).

813 NGR, r. 99(2).

814 NGR, r. 99(3).

815 NGR, r. 99(4).

816 Jemena, *Access arrangement proposal*, August 2009, clause 10.1, p. 37.

- any adjustments in the final year of the access arrangement period arising from the proposed annual tariff adjustment mechanism incorporating the annual weather variation adjustment, the annual unaccounted for gas (UAG) adjustment, the licence fee event adjustment and the other events adjustment, apply when calculating the initial network tariffs for the next access arrangement period. Jemena proposes that this fixed principle apply for the access arrangement period and the next access arrangement period⁸¹⁷
- the expansion incentive mechanism outlined in clause 4.2 of the access arrangement proposal will apply for the access arrangement period and the next access arrangement period.⁸¹⁸

8.4 AER's analysis and considerations

The AER accepts Jemena's proposed fixed principle requiring the AER to provide 18 months' notice to Jemena before revoking the direction under r. 53 of the NGR, which requires Jemena to consolidate its access arrangements for its four covered pipelines.

As discussed in chapter 13 of the draft decision, the AER does not approve the annual weather variation adjustment, the annual UAG adjustment, the licence fee event adjustment and the other events adjustment as annual tariff adjustments. The AER requires Jemena to delete these proposed annual tariff adjustments from the access arrangement proposal, as set out in chapter 13 of the draft decision. For the reasons provided at chapter 13, the AER does not approve clause 10.2 of the access arrangement proposal as a fixed principle for the access arrangement period and the next access arrangement period.

As discussed in chapter 7 of the draft decision, the AER does not approve the expansion incentive mechanism proposed by Jemena in clause 4.2 of the access arrangement proposal. The AER requires Jemena to delete clause 4.2 from the access arrangement proposal as set out in chapter 7 of the draft decision. For the reasons provided at chapter 13, the AER does not approve clause 10.3 of the access arrangement proposal as a fixed principle for the access arrangement period and the next access arrangement period.

8.5 Conclusion

The AER approves clause 10.1 of the access arrangement proposal as a fixed principle in accordance with r. 99 of the NGR.

The AER does not propose to approve clauses 10.2 and 10.3 of the access arrangement proposal as fixed principles due to the required amendments set out in chapter 13 and chapter 7 of the draft decision respectively, and under r. 40(3) of the NGR requires Jemena to make the amendments set out below.

817 Jemena, *Access arrangement proposal*, August 2009, clause 10.2, pp. 37–38.

818 Jemena, *Access arrangement proposal*, August 2009, clause 10.3, p. 38.

8.6 Amendments required to the access arrangement proposal

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 8.1: amend the access arrangement proposal to delete clauses 10.2 and 10.3.

9 Operating expenditure

9.1 Introduction

Operating expenditure includes the operating, maintenance and other costs as well as expenditure of a non-capital nature incurred in providing pipeline services. Operating expenditure may include expenditure incurred in increasing long-term demand for pipeline services and otherwise in developing the market for pipeline services.⁸¹⁹

This chapter sets out Jemena's proposal, submissions and the AER's analysis and considerations of Jemena's proposed operating expenditure.

9.2 Regulatory requirements

Rule 72(1)(a)(ii) and 72(1)(e) of the NGR provides that the access arrangement information for a full access arrangement proposal must include:

- if the access arrangement period commences at the end of an earlier access arrangement period, operating expenditure (by category) over the earlier access arrangement period
- a forecast of operating expenditure over the access arrangement period and the basis of which the forecast has been derived.

Rule 72(1)(f) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the key performance indicators (KPIs) to be used by the service provider to support expenditure to be incurred over the access arrangement period.

Rule 91 of the NGR provides that operating expenditure must be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

9.3 Jemena's proposal

9.3.1 Earlier access arrangement period

The AER is not required to assess whether Jemena's operating expenditure in the earlier access arrangement period was prudent. An overview of actual operating expenditure is included as it provides context to Jemena's forecast operating expenditure.

Jemena's total operating expenditure during the earlier access arrangement period is expected to be \$633.7 million (\$2009–10). This is \$50.4 million (\$2009–10) or 7.4 per cent below the amount approved by the IPART.⁸²⁰ Variances between the IPART allowance and actual incurred costs are presented by year and category in Table 9.1.

819 NGR, r. 69.

820 Jemena, *Access arrangement information*, August 2009, p. 45.

Table 9.1: Jemena's allowed and incurred operating expenditure (\$m, real, 2009–10 unless otherwise stated)

		2005–06	2006–07	2007–08	2008–09	2009–10
Operating and maintenance	Allowed	79.8	80.9	81.5	82.1	82.7
	Incurred	85.9	87.2	85.4	77.9	79.4
	Variance (%)	7.6	6.2	5.4	4.6	3.9
Administration and overheads	Allowed	21.2	21.5	21.7	21.9	22.1
	Incurred	18.4	20.3	20.8	24.0	24.5
	Variance (%)	-13.2	-5.6	-4.1	9.6	10.9
Marketing	Allowed	19.2	19.5	19.6	19.8	20.0
	Incurred	4.3	2.8	4.6	6.5	7.5
	Variance (%)	-77.6	-85.6	-76.5	-67.2	-62.5
Government levies	Allowed	3.7	3.7	3.7	3.7	3.7
	Incurred	3.8	4.3	4.0	3.1	3.1
	Variance (%)	2.7	16.2	8.1	-16.2	-16.2
Unaccounted for gas	Allowed ^a	10.5	10.3	10.4	10.4	10.5
	Incurred	15.7	14.1	12.0	12.5	11.6
	Variance (%)	49.5	36.9	15.4	20.2	10.5
Total operating expenditure	Allowed	134.4	135.8	136.9	137.8	138.9
	Incurred	128.1	128.6	126.8	124.0	126.2
	Variance (%)	-4.7	-5.3	-7.4	-10.0	-9.1

Source: Jemena, *Access arrangement information*, August 2009, p. 47.

a: In addition to the IPART allowance stated, there was provision for pass through of UAG variations arising from both the level of gas receipts and the cost of gas.

Jemena submits that it achieved operating efficiencies in each year of the earlier access arrangement period.⁸²¹ The AER notes that Jemena significantly underspent the marketing allowance approved by the IPART by a total of \$72.4 million (\$2009–

821 Jemena, *Access arrangement information*, August 2009, p. 47.

10, real) or 73.8 per cent over the earlier access arrangement period⁸²² due to a lower take-up of its incentive payment program.⁸²³

Jemena overspent the IPART approved expenditure on unaccounted for gas (UAG) by \$13.8 million (\$2009–10, real) or 26.5 per cent and operating and maintenance expenditure by \$8.8 million (\$2009–10, real) or 2.2 per cent. Jemena’s expected administration and overheads expenditure in the earlier access arrangement period is broadly in line with the IPART approved allowance.⁸²⁴

9.3.2 Proposed operating expenditure

Jemena proposes forecast operating expenditure of \$735.1million (\$2009–10, real).⁸²⁵ In real terms, this is 16.0 per cent higher than the expected actual total operating expenditure for the earlier access arrangement period. The average annual real increase in total forecast operating expenditure is 4.7 per cent over the access arrangement period.

Jemena proposes several step changes (totalling \$4.1 million (\$2009–10, real) in each year) to its forecast operating expenditure.⁸²⁶ These include costs associated with new regulatory obligations and changes in the operating environment that are outside Jemena’s control, such as climate change policies.⁸²⁷ Further, Jemena proposes to introduce carbon, self insurance and debt raising costs in its forecast operating expenditure. Jemena also proposes increases in real terms for the expenditure categories:

- operating and maintenance (5.6 per cent increase)
- administration and overheads (11.9 per cent increase)
- marketing (59.5 per cent increase).⁸²⁸

Jemena’s forecast operating expenditure for the access arrangement period is set out in Table 9.2.

822 Jemena, *Access arrangement information*, August 2009, p. 47.

823 Jemena, *Presentation to AER*, 16 October 2009, slide 57 notes.

824 Jemena, *Access arrangement information*, August 2009, p. 47.

825 Jemena, *Access arrangement information*, August 2009, p. 75.

826 Jemena, *Access arrangement information*, August 2009, p. 81.

827 Jemena, *Access arrangement information*, August 2009, p. 78.

828 Jemena, *Access arrangement information*, August 2009, pp. 84, 93. Percentage increases represent expenditure in the access arrangement period compared to the earlier period rather than year on year comparisons.

Table 9.2: Jemena's forecast operating expenditure (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Controllable costs						
Operating and maintenance	84.6	84.2	87.2	89.9	93.3	439.1
Administration and overheads	22.6	23.2	24.1	25.1	26.0	120.8
Marketing	8.2	8.2	8.2	8.2	8.2	41.0
Sub total	115.4	115.6	119.5	123.1	127.5	601.0
Non-controllable costs						
Government levies	3.1	3.1	3.1	3.1	3.1	15.7
Unaccounted for gas	11.4	11.4	11.3	11.4	11.6	57.0
Carbon costs	0.00	4.0	11.0	11.9	12.9	39.8
Self insurance costs	2.5	2.5	2.5	2.5	2.5	12.3
Debt raising costs	1.8	1.9	1.9	2.0	2.0	9.5
Sub total	18.8	22.9	29.7	30.8	32.0	134.2
Total operating expenditure	134.1	138.4	149.2	154.0	159.4	735.1

Source: Jemena, *Access arrangement information*, August 2009, pp. 84, 93.

Note: Jemena categorises its forecast operating expenditure into the major categories of operating and maintenance and non-operating and maintenance costs. The AER has classified Jemena's forecast operating expenditure categories into controllable and non-controllable costs. The AER notes that Jemena has identified errors and omissions in its Access Arrangement Information and associated models that are not accounted for in this table. For example, Jemena, email to the AER, 14 December 2009: RE: AER 10 Dec 09 Questions - meeting to explain modelling; and Jemena, email to the AER, 18 December 2009: JGN response to AER 10 Dec 09 Questions.

9.4 Consultant's report

The AER engaged Wilson Cook to review Jemena's forecast operating expenditure, in particular the key controllable operating expenditure categories; operating and maintenance, and administration and overheads. The report provided by Wilson Cook (the Wilson Cook report) notes that the lack of detailed bottom-up analysis for the key category of operating and maintenance costs compromised its ability to verify an efficient level of expenditure.⁸²⁹ The Wilson Cook report assesses the proposed base year's expenditure at an aggregate level in the absence of detailed bottom-up cost and

829 Wilson Cook & Co, *Review of expenditure of ACT & NSW Gas Distributors*, Jemena Gas Networks (NSW) Ltd, December 2009, pp. 16, 20, 27 (Wilson Cook report).

activity volume information.⁸³⁰ Further, because details such as work volumes, detailed cost breakdowns or estimates were not provided by Jemena to support its proposal, the Wilson Cook report cannot confirm whether the proposed step changes were required, nor whether the proposed profit margin involved double counting of costs.⁸³¹ Therefore, the Wilson Cook report recommends rejecting many of the proposed step changes in addition to the inclusion of the proposed margin associated with Jemena's Asset Management Agreement (AMA) with Jemena Asset Management Pty Ltd (JAM).⁸³²

9.5 Submissions

The AER received submissions from the Energy Markets Reform Forum (EMRF) and the Energy Users Association of Australia (EUAA) on Jemena's proposed operating expenditure. Submissions were also received from AGL Energy (AGL)⁸³³ and EnergyAustralia⁸³⁴ on Jemena's UAG. In a submission from Jemena, the AER was provided with a confidential benchmarking report on Jemena's operating expenditure.⁸³⁵

The EMRF notes a large step increase in Jemena's proposed operating expenditure. It considers that with the proposed significant increase in capital expenditure projects, Jemena should be required to provide much larger efficiency savings in the form of capital expenditure/operating expenditure trade-offs, larger productivity savings and savings from maintenance programs no longer required on replaced assets.⁸³⁶

The EMRF concludes that based on the historical performance of Jemena, the AER should continue the IPART imposed operating expenditure efficiency expectation of 1.5 per cent per annum and that the allowed operating expenditure be set at the same level as Jemena achieved in the earlier access arrangement period (i.e. at approximately \$100 million per annum). It considers that there should be an allowance for step changes of up to \$1 million per annum and a pass through of carbon costs when the Carbon Pollution Reduction Scheme (CPRS) legislation takes effect.⁸³⁷

The EUAA analyses Jemena's proposed operating expenditure in the two previous access arrangement periods and notes that for the early years of an access arrangement period, Jemena tends to be conservative in its estimates of its efficiency to achieve lower costs. It considers that the AER should take this past pattern of

830 Wilson Cook report, pp. 27–29.

831 Wilson Cook report, pp. 26–27.

832 Wilson Cook report, pp. 26–27, 29–36.

833 AGL, *AGL submission: JGN access arrangement 2010–15*, 10 November 2009, p. 5 (AGL, *Submission to the AER*, 10 November 2009).

834 EnergyAustralia, *EnergyAustralia's submission on Jemena Gas Networks' access arrangement proposal 2010 to 2015*, 10 November 2009, pp. 9, 23. (EnergyAustralia, *Submission to the AER*, 10 November 2009).

835 Jemena, *Submission to the AER consultation on JGN's access arrangement*, 10 November 2009, appendix 7 (confidential) (Jemena, *Submission to the AER*, 10 November 2009).

836 EMRF, *AER NSW gas distribution revenue reset Jemena application, a response by the Energy Markets Reform Forum*, 9 November 2009, p. 37 (EMRF, *Submission to the AER*, 9 November 2009).

837 EMRF, *Submission to the AER*, 9 November 2009, p. 46.

forecasting expenditure into account and that the AER should be rigorous in setting Jemena's allowances.⁸³⁸ The EUAA provides comment on Jemena's UAG for gas and carbon costs submitting that the AER should ensure that Jemena should be striving to reduce these costs.⁸³⁹ The EUAA also discusses the need for robust benchmarking in assessing the efficient costs of network businesses.⁸⁴⁰

AGL supports the proposition that unit replacement costs for UAG be measured against the market gas price of the short term trading market (STTM) and seeks assurance that there will be transparency around unit procurement costs.⁸⁴¹ However, EnergyAustralia submits that Jemena should source UAG replacement gas directly from the STTM only when it is cheaper than from an open tender process.⁸⁴² EnergyAustralia also submits that it has concerns with regard to the calculation of the annual tariff adjustment for UAG with respect to the UAG tolerance level and the calculation of carbon permit costs.⁸⁴³

9.6 AER's analysis and considerations

9.6.1 Preliminary issues

9.6.1.1 Interpretation of lowest sustainable costs

Rule 91 of the NGR requires operating expenditure to be such as would be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services. Noting that the terms included in r. 91 of the NGR are not defined in the NGR, the Wilson Cook report discusses its technical application of prudence, efficiency, good industry practice and lowest sustainable cost.⁸⁴⁴ An important element of r. 91 of the NGR is balancing prudence and efficiency, culminating in the lowest sustainable cost of delivering pipeline services. In brief, the lowest cost option of a particular project or program could only be considered sustainable if a long term assessment of costs is undertaken. The Wilson Cook report states:⁸⁴⁵

The costs and benefits considered should be "life-cycle" costs – viz. the costs and benefits over the expected life of the project or programme concerned. This ensures that a long-term view is taken of investment requirements.

In this way, the "sustainability" of delivery of the pipeline services (which we interpret to mean sustainable at the required level over time) is inherent in the concept of the least-cost option in that a long-term view is taken when identifying the project requirements (in terms of service capability, capacity or the like), the costs and the benefits of the options available to meet the identified need and the resulting solution.

838 EUAA, *Submission to the AER on Jemena Gas Networks' access arrangement proposal 2010/11–2014/15*, 10 November 2009, s. 1.6 (EUAA, *Submission to the AER*, 10 November 2009).

839 EUAA, *Submission to the AER*, 10 November 2009, s. 1.6.1.

840 EUAA, *Submission to the AER*, 10 November 2009, s. 1.4.

841 AGL, *Submission to the AER*, 10 November 2009, p. 5.

842 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 9.

843 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 23.

844 Wilson Cook report, pp. 5–6.

845 Wilson Cook report, p. 6.

As can be seen from the preceding text, the concept of least-cost options inherently incorporates the selection of modern designs and technologies and such other features as are in accordance with good industry practice.

The AER considers that the Wilson Cook report's definition of lowest sustainable costs is appropriate for the purpose of assessing Jemena's proposed operating expenditure.

9.6.1.2 Insufficient substantiation of forecasts, errors and omissions

The AER notes that a lack of clarity and detailed bottom up information within Jemena's access arrangement proposal and subsequent correspondence has limited the ability of Wilson Cook and the AER to verify that the proposed forecasts are consistent with the requirements of r. 91 of the NGR. For example, the Wilson Cook report outlines that several issues have hindered an assessment of the proposed operating expenditure including:

- the structure and lack of reconciliation of the forecast operating and maintenance expenditure
- the lack of detailed information on costs and the work volumes and the interaction of related party arrangements have made it difficult to assess the cost efficiency
- the need for a detailed bottom up analysis to support JAM's costs.⁸⁴⁶

Further, the AER has concerns about the consistency and accuracy of Jemena's proposal. There are a number of errors and omissions in its access arrangement information. For example, neither the name of the events or the value of events for self insurance operating expenditure outlined in a confidential appendix⁸⁴⁷ is consistent with Jemena's access arrangement information.⁸⁴⁸ The AER also notes that the incurred expenditure for the administration and overhead cost category in Table 4.7 of the access arrangement information is incorrect.⁸⁴⁹

Jemena has provided manuals to assist the AER in its review of the models provided to support its access arrangement proposal.⁸⁵⁰ It has also at various stages in the review process provided its assets register to the AER and allowed the AER to review certain input models on site that underlie Jemena's proposal. An offer was also made by Jemena on 14 December 2009 to take the AER through these models following a series of questions raised by the AER, in reviewing and trying to reconcile information in the JGN forecast data model and Jemena's access arrangement information.⁸⁵¹

846 Wilson Cook report, pp. 12–13.

847 Jemena, *Access arrangement information*, August 2009, appendix 6.5 (confidential).

848 Jemena, *Access arrangement information*, August 2009, pp. 91–92.

849 In Jemena's operating expenditure model, the reported cost incorrectly includes self insurance costs within incurred expenditure for 2008–09 (the selected base year). This error is replicated in the access arrangement information on page 47.

850 Jemena, *Model User Manuals*, 26 August 2009 (confidential).

851 Jemena, email to the AER, 11 December 2009: 'RE: AER 10 Dec 09 Questions—meeting to explain modelling.'

The AER did not take up this offer, because it sought specific information about a particular aspect of the model workings relating to the removal of capital expenditure from reported costs.⁸⁵² In response to clarifying the AER's query, Jemena informed the AER that it had found an error with the reconciliation process and they were working through it.⁸⁵³

In further correspondence⁸⁵⁴ on this matter Jemena outlined 'its further investigation following the AER's recent questions has identified some areas where the necessary adjustments were not made or certain adjustments incorrectly applied.' The nature of adjustments included omissions and errors.⁸⁵⁵ The correspondence also outlines that 'the following sections explain each omission and correction. These explanations are based on the data input JGN submitted on 26 August 2009 in its forecast data model.'⁸⁵⁶

On 18 December 2009, Jemena sought to correct its access arrangement information and increase its base year operating and maintenance (O&M) costs by \$5.64 million (\$2008) and to add an additional \$40.3 million to its operating expenditure forecast in its access arrangement proposal submitted in August 2009.⁸⁵⁷ This error represents more than 9 per cent of the O&M category, or more than 5 per cent of the proposed total operating expenditure.

Based on Jemena's statement that 'JGN is currently working to complete the collation and external validation of its actual base year costs and will have this information available in the first quarter of 2010',⁸⁵⁸ the AER has not considered these costs for the purposes of the draft decision. While the AER acknowledges that the access arrangement information submitted in August 2009 contains omissions and errors, the AER has based this draft decision on its analysis in these original documents (and where relevant models). This is primarily because Jemena has not yet provided the updated and externally verified information for the actual base year expenditure⁸⁵⁹ that would provide a useful starting point for this process. The AER also considers that this new information would also need to be subject to public consultation and reviewed by the AER's consultants.

Nonetheless, the AER considers these costs may be considered as part of Jemena's revised access arrangement proposal.

852 AER, email to Jemena, 14 December 2009: 'RE: AER 10 Dec 09 Questions—meeting to explain modelling'.

853 Jemena, email to the AER, 14 December 2009: 'RE: AER 10 Dec 09 Questions—meeting to explain modelling'.

854 Jemena, email to the AER, 18 December 2009: 'JGN response to AER 10 Dec 09 Questions'.

855 Jemena, Response to AER 11 December 2009 questions, 18 December 2009, p. 5.

856 Jemena, Response to AER 11 December 2009 questions, 18 December 2009, p. 5.

857 Jemena, Response to AER 11 December 2009 questions, 18 December 2009, p. 8.

858 Jemena, Response to AER 11 December 2009 questions, 18 December 2009, p. 9.

859 Jemena, Response to AER 11 December 2009 questions, 18 December 2009, p. 9.

9.6.2 Proposed operating expenditure

The AER notes the significant increase in real terms (16.0 per cent) in Jemena's forecast operating expenditure for the access arrangement period when compared to its expected operating expenditure for the earlier access arrangement period. The average annual increase in total expenditure of 4.7 per cent over the access arrangement period compares with 0.4 per cent average annual decrease over the earlier access arrangement period.⁸⁶⁰

The AER notes that carbon costs, debt raising costs and self insurance costs were not operating expenditure items in the earlier access arrangement period. In the absence of these costs, Jemena's operating expenditure is forecast to increase in real terms by 6.3 per cent for the access arrangement period when compared to its expected operating expenditure for the earlier access arrangement period.⁸⁶¹

Jemena submits there are a number of step changes in its forecast operating expenditure that are related to regulation costs and new asset operational and maintenance costs.⁸⁶² The AER notes that these step changes contribute to increases in Jemena's forecast operating and maintenance costs and administration and overheads costs.

Most of Jemena's operating and maintenance costs are incurred through an arrangement with a related entity, JAM, which provides asset management services to Jemena.⁸⁶³ For the provision of these asset management services under the AMA, Jemena is required to pay JAM a cost plus margin fee. Jemena submits that its AMA provides for a commercial margin that is different to the previous arrangements.⁸⁶⁴

9.6.3 Methodology

Jemena has employed two methodologies for forecasting its operating expenditure. These are:

1. base year roll forward
2. year by year specific forecasts where the base year roll forward would be inappropriate.⁸⁶⁵

Jemena has applied a base year roll forward approach to the majority of its recurrent operating expenditure which can be seen in the categories; operating and maintenance, and administration and overheads.⁸⁶⁶ Jemena's base year roll forward approach involves three steps:

- a. identifying a base year

860 Jemena, *Access arrangement information*, August 2009, pp. 47, 75.

861 Jemena, *Access arrangement information*, August 2009, pp. 47, 84, 93.

862 Jemena, *Access arrangement information*, August 2009, p. 81.

863 Jemena, *Access arrangement information*, August 2009, p. 77.

864 Jemena, *Access arrangement information*, August 2009, p. 80.

865 Jemena, *Access arrangement information*, August 2009, p. 77.

866 Jemena, *Access arrangement information*, August 2009, p. 77.

- b. adjusting the base year's expenditure as follows:
- re-aligning costs to fit with Jemena's current corporate structure and its new outsourcing arrangements
 - subtracting costs associated with one-off events during the base year and circumstances that are not expected to endure
 - adding costs associated with foreseeable incremental step changes in expenditure
- c. rolling the base year costs forward and adjust for:
- network growth
 - changes in input costs (labour and materials)
 - inflation.⁸⁶⁷

Jemena forecasts costs on a specific year-by-year basis ('bottom-up' approach) for government levies, marketing, UAG, self insurance, carbon costs and site remediation.⁸⁶⁸ These forecasts are considered later in this chapter.

In principle, the AER accepts the forecasting methodology used by Jemena. However, the AER does not consider that the methodology as applied by Jemena demonstrates that the proposed forecast operating expenditure is consistent with the lowest sustainable cost of delivering pipeline services as required by r. 91 of the NGR. The application of the base year roll forward approach is discussed below. The year-by-year specific forecasts are considered in section 9.6.5.

9.6.4 Base year roll forward forecasts

Jemena applies a base year roll forward approach to two cost categories: (i) operating and maintenance costs; and (ii) administration and overheads. Jemena submits that it adjusts its base year operating expenditure to take into account its reclassification of some costs. This is necessary because of a change in its corporate structure and its new outsourcing agreement with JAM since the earlier access arrangement period.⁸⁶⁹

For comparison with the earlier access arrangement period, Table 9.3 sets out Jemena's aggregate operating expenditure over the last five years of the earlier access arrangement period with its forecast costs for the access arrangement period. Given the changes within the operating and maintenance and administration and overhead cost categories reflect the structural changes mentioned above, the percentage change figures for individual categories may be misleading.

867 Jemena, *Access arrangement information*, August 2009, pp. 77–78.

868 Jemena, *Access arrangement information*, August 2009, p. 77.

869 Jemena, *Access arrangement information*, August 2009, pp. 79–80.

Table 9.3: Jemena's forecast operating expenditure (\$m, real, 2009 –10)

Base year roll forward costs	Earlier access arrangement period	Forecast access arrangement period	Percentage change
Operating and maintenance	415.8	439.1	5.6
Administration and overheads	108.0	120.8	11.9
Total O&M and A&O	523.8	559.9	6.9

Source: Jemena, *Access arrangement information*, August 2009, pp. 47, 84, 93.

Note: Operating and maintenance costs now include retail contestability costs which were previously determined by the IPART to be uncontrollable costs. (Jemena, *Access arrangement information*, August 2009, p. 46).

9.6.4.1 Overview of cost allocation methodology and base year roll forward categories

Cost allocation methodology

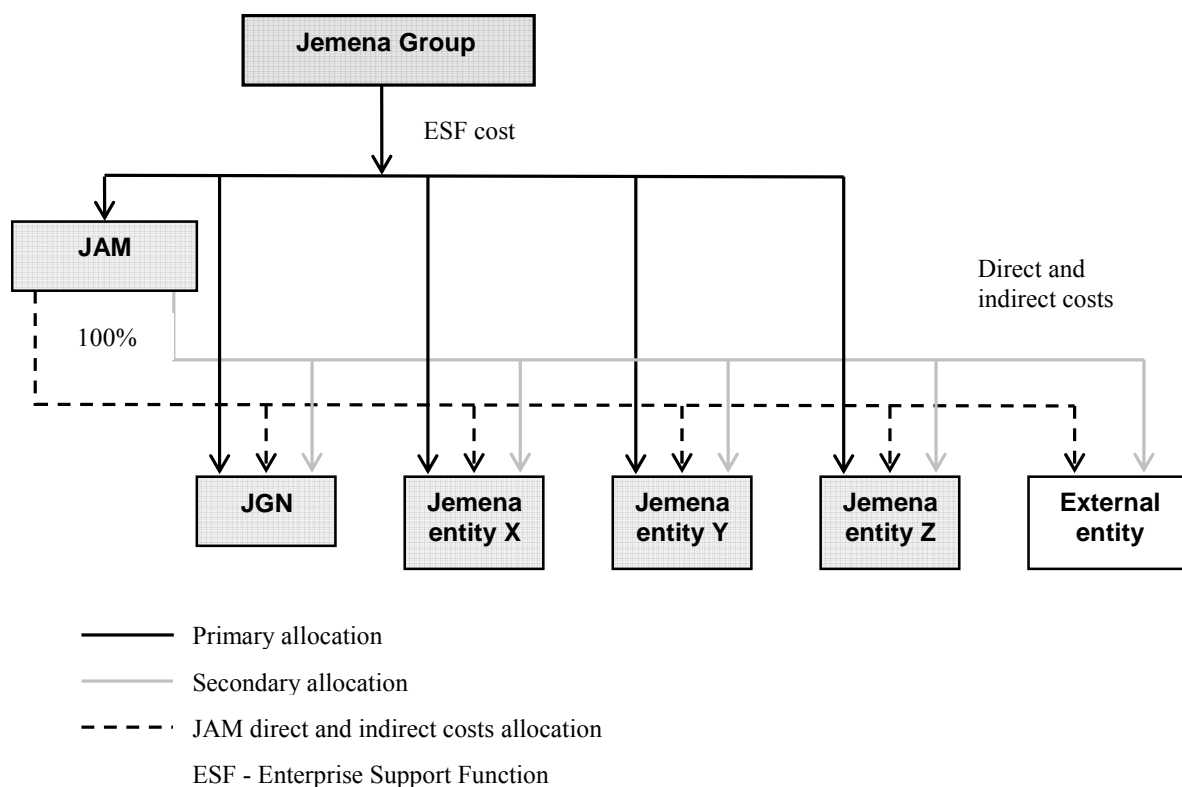
Jemena submits that to determine its share of the corporate overheads from the Jemena Group⁸⁷⁰, a cost allocation methodology known as the whole of business cost allocation (WOBCA) is used. The cost allocation methodology allocates these corporate costs to entities such as Jemena and JAM.⁸⁷¹ Figure 9.1 describes the application of the cost allocation methodology:⁸⁷²

870 The Jemena Group includes all entities that are wholly or partially owned by SPI (Australia) Assets Pty Ltd, which is a wholly owned subsidiary of Singapore Power International Limited Pte Ltd. The AER notes there may be other Australian related parties also providing services and whose costs are allocated under the WOBCA. These related entities are registered in Australia and are also substantially or wholly owned by Singapore Power International Limited Pte Ltd.

871 Jemena, *Access arrangement information*, August 2009, pp. 78–79.

872 Adapted from Jemena, *Access arrangement information*, August 2009, appendix 6.1, p. 11 (confidential).

Figure 9.1: Description of Jemena's cost allocation methodology



The WOBCA methodology includes primary cost allocations of corporate head office costs that are directly charged to Jemena and JAM from the Jemena Group. The corporate head office costs allocated to Jemena (direct allocations) are accounted for in the administration and overheads. WOBCA also includes secondary allocations or indirect allocations. The secondary allocations represent corporate head office costs JAM is allocated, but on-charges from the Jemena Group to assets such as the Jemena Gas Network (JGN) to which it provides services.⁸⁷³ The indirect or secondary allocations are part of the operating and maintenance expenditure category. These secondary allocations attract a flat percentage margin as outlined in the AMA.

PricewaterhouseCoopers (PwC) reviewed the administration and overhead cost allocation methodology for Jemena and considers that the methodology is appropriate.⁸⁷⁴

Operating and maintenance costs

Operating and maintenance costs are the single largest category making up 59.7 per cent of Jemena's total forecast operating expenditure. They are incurred through JAM's asset management services under the AMA.⁸⁷⁵

As outlined, the operating and maintenance costs include the indirect or secondary allocations for corporate costs from the Jemena Group under the WOBCA.⁸⁷⁶

873 Jemena, *Access arrangement information*, August 2009, p. 86 and appendix 6.1 (confidential).

874 Jemena, *Access arrangement information*, August 2009, appendix 6.1, p. 4 (confidential).

875 Jemena, *Access arrangement information*, August 2009, p. 75.

Jemena's operating and maintenance costs are forecast to increase by 5.6 per cent in real terms over the access arrangement period when compared with those costs incurred over the earlier access arrangement period.⁸⁷⁷ This is a result of increases in forecast base costs, step changes, site remediation costs and JAM's margin.⁸⁷⁸ The AER notes that Jemena's forecast operating and maintenance base cost, site remediation costs and JAM's margin including some of the justification for the proposed costs are included in confidential material provided by Jemena.⁸⁷⁹ The AER's consideration of proposed site remediation costs is in section 9.6.5 along with the other year by year specific forecasts.

Asset management agreement margins

As outlined, Jemena outsources its asset planning activities, network operating and maintenance activities, capital program delivery, and certain other functions to JAM.⁸⁸⁰ The terms and conditions of this outsourcing arrangement are set out in the AMA. The services provided by JAM to JGN under the AMA in relation to operating expenditure are represented by the operating and maintenance expenditure category. The AMA is an agreement between related parties and is not the result of a competitive tender or other open market process.

JAM provides the services based on the operating and maintenance expenditure costs plus a (base and performance) margin fee under the AMA. While this approach usually provides limited incentive for the outsourced entity to create efficiencies, Jemena submits that the JAM fee structure provides for performance incentives.⁸⁸¹ As outlined previously, the final margin agreed upon under this agreement is confidential.⁸⁸²

The operating and maintenance costs (including site remediation costs) include a margin.⁸⁸³ The margin may be considered as remuneration for JAM for undertaking services on behalf of JGN. The AER notes that this margin is applied to all expenditure paid through JAM, regardless of whether the underlying cost is incurred by JAM or another party. The margin is made up of two components: (i) a base margin; and (ii) a smaller performance margin.⁸⁸⁴

The Wilson Cook report was critical of Jemena's proposed margin, stating that as a general principle, only genuine costs should be included in forecast operating expenditure. The Wilson Cook report also notes that the AMA is an agreement between related parties and not market tested or subject to competitive tender. The Wilson Cook report states that in the circumstances, Jemena should provide sufficient information to substantiate its overhead costs, operating costs and margins and to

876 Jemena, *Access arrangement information*, August 2009, appendix 6.1 (confidential).

877 Jemena, *Access arrangement information*, August 2009, pp. 47, 93 (confidential).

878 Jemena, *Access arrangement information*, August 2009, pp. 93–96 (confidential).

879 Jemena, *Access arrangement information*, August 2009, p. 93.

880 Jemena, *Access arrangement information*, August 2009, p. 29 (confidential).

881 Jemena, *Access arrangement information*, August 2009, pp. 35–37 (confidential).

882 Jemena, *Access arrangement information*, August 2009, pp. 35–37 (confidential).

883 Jemena, *Access arrangement information*, August 2009, p. 93 (confidential).

884 Jemena, *Access arrangement information*, August 2009, p. 38 (confidential).

demonstrate that these costs are not duplicated or recouped elsewhere, and moreover, that they are consistent with the lowest sustainable cost of providing the service.⁸⁸⁵ The Wilson Cook report also notes that the margin was proposed to apply to costs passed through from other entities and not restricted to the services provided by JAM itself. As a consequence, the Wilson Cook report recommends that the margin is removed from Jemena's forecast operating expenditure unless Jemena is able to demonstrate through a reconciliation of costs or other means that the item is required to recover identifiable costs.⁸⁸⁶

In principle, the AER does not consider that margins on services provided by external providers are incompatible with r. 91 of the NGR. However, in order for the requirements of r. 91 of the NGR to be met, the AER must be able to verify that the total cost proposed, including any margin applied to a cost base, represents the lowest sustainable cost of providing the service. This may be demonstrated if the costs including the applicable margin for providing services is the result of a competitive tender process. However, the AMA is an agreement with a related entity. Further, Jemena has not demonstrated that the margin it has negotiated with JAM is efficient or consistent with the lowest sustainable cost. The AER also considers that applying a margin where the underlying activity is not undertaken by the party that is charging a margin, is inconsistent with the requirements of r. 91 of the NGR. The AER does not consider that such cost structures can be demonstrated to be cost efficient.

For the reasons set out above, the AER considers that Jemena's proposed margin should not be included in its forecast operating expenditure.

Administration and overhead costs

Jemena submits that its administration and overhead costs category relates to the management of its business and is comprised of:

- the cost of Jemena's management activities
- the allocation of corporate overheads to Jemena's share of costs of enterprise support functions, charged directly to Jemena from Jemena Limited (and other Jemena Group companies)
- other Jemena specific overheads including costs related to Jemena's properties, land owned and leased by Jemena on which trunk receiving stations sites are located and environmental monitoring of properties.⁸⁸⁷

Jemena also submits that its administration and overhead costs have been escalated using the Competition Economics Group (CEG) determined escalators.⁸⁸⁸

Jemena's administration and overhead costs are forecast to increase by an average of 10.0 per cent per annum over the access arrangement period when compared to the adjusted base year (2008–09) expenditure.⁸⁸⁹

885 Wilson Cook report, p. 25.

886 Wilson Cook report, p. 26.

887 Jemena, *Access arrangement information*, August 2009, p. 85.

888 Jemena, *Access arrangement information*, August 2009, p. 86.

9.6.4.2 Selection of base year

Jemena proposes to use 2008–09 as the base year for projecting forecast operating expenditure over the access arrangement period. Jemena submits that the base year should be the most recent year for which full year actual costs are available (or will become available) prior to the AER’s decision.⁸⁹⁰ Jemena’s base year is comprised of actual and estimated costs (for the last three months of direct costs and the last four months of indirect costs).⁸⁹¹

The AER considers that the following conditions should be met when selecting and adjusting a base year for projecting efficient operating costs:

- the base year should not include substantial one-off expenditure
- the expenditure should reflect actual rather than forecast or unrealised expenditure
- the base year generally should be as close as possible to the forecast period. A year proximate to the commencement of the access arrangement period, excluding one-off factors, is likely to better reflect the current operating and organisational structure of a business than earlier years.

The AER notes that the base year selected by Jemena includes a mixture of actual and estimated expenditure.⁸⁹² However, actual expenditure for 2008–09 will be available prior to the final decision.

The AER considers that 2008–09 is an appropriate year for projecting Jemena’s operating expenditure over the access arrangement period for the following reasons:

- the estimated operating expenditure for 2008–09 does not appear to be obscured by one-off expenditure as it is broadly consistent with the expenditure for the previous year 2007–08.⁸⁹³ The AER also notes that Jemena has identified and removed some one-off costs from its base year operating expenditure⁸⁹⁴
- the estimated 2008–09 operating expenditure can be considered to be reasonably reliable as it is largely derived from actual expenditure. The less significant component, which has been estimated, meets the requirements of r. 74(2)(a) of the NGR. In any case, the AER notes that actual expenditure for 2008–09 will be available prior to the AER’s final decision, such that the operating expenditure forecast can be updated for any variances as part of Jemena’s revised access arrangement proposal

889 Jemena, *Access arrangement information*, August 2009, p. 84.

890 Jemena, *Access arrangement information*, August 2009, p. 77.

891 Jemena, *Access arrangement information*, August 2009, p. 78.

892 Jemena, *Access arrangement information*, August 2009, p. 78.

893 The AER notes that Jemena has also assessed the base year’s expenditure and proposed adjustments for expenditure that is not expected to be ongoing.

894 While some one-off costs have been removed, the AER and Wilson Cook have not reviewed sufficient information to verify that all one-off costs have been identified and removed.

- the selected base year is proximate to the commencement of the access arrangement period and likely to reflect the circumstances of Jemena during the access arrangement period. The AER notes that Jemena underwent structural and ownership changes in 2007–08. The base year selected is the first year that its operating expenditure is structured in a way that reflects the new business model and ownership structure. However, the AER notes that one of the key components of Jemena’s operating framework for the access arrangement period (i.e. the AMA) has only been in place since 1 August 2009.

While the AER considers that the 2008–09 year is an appropriate year to use as a base year provided appropriate adjustments for non-recurring costs are made, it notes the concerns raised in the Wilson Cook report that there is insufficient detailed information to verify that the base year costs are efficient.⁸⁹⁵ The AER considers that the base year costs used to establish forecast expenditure must represent the lowest sustainable cost of providing the pipeline services as required by r. 91 of the NGR. Further, given that Jemena’s proposal will mean that a margin is added to some of these base year costs (i.e. those classified as operating and maintenance in the access arrangement period), the margin and base year costs will both need to meet the requirements r. 91 of the NGR. The reasons for removing the margin are outlined in section 9.6.4.1.

9.6.4.3 One-off events

Jemena submits that there are a number of costs which are one-off in nature or higher in 2008–09 than may be the case in a typical year.⁸⁹⁶ Jemena subtracts costs such as corporate branding, IT and business project costs totalling \$4.4 million (\$2009–10) from its base year operating expenditure.⁸⁹⁷

The AER considers that Jemena’s deduction of one-off costs is appropriate. However, the AER notes that some of these one-off costs such as corporate branding do not relate to the delivery of pipeline services⁸⁹⁸ and do not meet the operating expenditure criteria.⁸⁹⁹ This view is shared by the EMRF.⁹⁰⁰ Further, in the absence of detailed bottom up cost and activity information, the AER is unable to verify that all one-off and non-recurring costs, and costs other than those associated with the delivery of pipeline services, have been identified and removed from the proposed base year’s expenditure.

9.6.4.4 Consultant’s recommendation on base year’s expenditure

In considering the base year level of expenditure, the Wilson Cook report notes that:⁹⁰¹

895 Wilson Cook report, pp. 27–29.

896 Jemena, *Access arrangement information*, August 2009, p. 80.

897 Jemena, *Access arrangement information*, August 2009, pp. 80, 81.

898 NGL, s. 2.

899 NGR, r. 91.

900 EMRF, *Submission to the AER*, 9 November 2009, p. 11.

901 Wilson Cook report, p. 27.

- no detailed bottom-up assessment of future operating and maintenance expenditure is provided by Jemena, nor any volumes of work carried out, detailed cost breakdowns or business cases for the main expenditure streams. This information was not provided for the earlier access arrangement period nor the forecast period
- for most elements, the basis of the forecast is the escalation of the sum of the present period plus identified step changes rather than a direct estimate of future requirements.

Jemena relies on its total factor productivity report and two benchmarking studies when making its claim that its forecast operating expenditure is efficient. The Wilson Cook report states that:⁹⁰²

... evidence of comparative positions does not establish efficiency per se; and such studies ought to be only as an accompaniment to a detailed “bottom-up analysis” of the expenditure. No such analysis was made available for our review.

The Wilson Cook report is also critical of Jemena's reliance on its AMA to demonstrate that its proposed costs are efficient:⁹⁰³

... Jemena has also relied on its out-sourcing contract, the AMA, but that it is a contract with a related party involves other related parties, was not bid competitively, is for a long term, is not accompanied by a reconciliation of costs—in short, it does not contain the elements normally expected in a competitive market.

Consequently, the Wilson Cook report recommends that the most robust approach to determining the efficient level of base year's expenditure and in turn forecast expenditure, is to take the lowest of:⁹⁰⁴

- the level of expenditure considered prudent and reasonable by the IPART in its review⁹⁰⁵
- the level of expenditure incurred in the base year by Jemena
- the level of expenditure proposed by Jemena as the starting point for the access arrangement period.

Between the earlier access arrangement period and the access arrangement period, Jemena has transferred certain functions and associated costs from the operations and maintenance category to the administration and overheads category. To account for these transfers, the analysis by Wilson Cook is done using the sum of both categories. The proposed step changes were excluded from the analysis, as was the proposed

902 Wilson Cook report, p. 27.

903 Wilson Cook report, p. 27.

904 Wilson Cook report, p. 27.

905 The AER notes that Wilson Cook report is referring to the IPART review that determined the operating expenditure allowed during the earlier access arrangement period.

margin associated with the AMA which was separately identified in Jemena's proposed operating expenditure. The Wilson Cook report rejects the inclusion of the proposed margin as it is unable to relate the margin to discernable costs.⁹⁰⁶ The Wilson Cook report also notes a concern that the margin may result in double counting of costs in a regulatory context and should be removed.⁹⁰⁷ The Wilson Cook report also expresses concern that any regulated business could increase its reported costs by introducing an intermediate company or chain of them if the issue of double counting is not assessed.⁹⁰⁸

9.6.4.5 AER's consideration of base year's expenditure

As noted above, the AER accepts the proposed methodology that uses a base year level of expenditure to derive its forecast. However, Jemena must demonstrate that the expenditures are consistent with r. 91 of the NGR. This requires forecast operating expenditure to be consistent with that incurred by a prudent service provider, acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of delivering pipeline services.

Such efficiency would usually be demonstrated by detailed bottom up costing including reporting of existing activity levels and costs measured against future requirements for the particular network. The Wilson Cook report outlines that despite requests from the AER and Wilson Cook for this information,⁹⁰⁹ Jemena has only provided general information for the category of operating and maintenance costs.⁹¹⁰

In the absence of this detailed underlying cost information, Jemena's access arrangement information and subsequent submission seek to rely on a number of benchmarking and total factor productivity (TFP) studies.⁹¹¹ However, for a variety of reasons discussed in section 9.6.6, neither Wilson Cook nor the AER considers that the studies are adequate to demonstrate that the proposed expenditure is consistent with the requirements of r. 91 of the NGR.⁹¹²

Where services are contracted to another party such as JAM, one means to demonstrate that the relevant operating and maintenance costs are consistent with the requirements of r. 91 of the NGR is to demonstrate these costs reflect, for example, the result of a competitive tender process. However, Jemena has not conducted a competitive tender to award the AMA.⁹¹³ Neither Wilson Cook nor the AER considers that the selection or negotiation process undertaken by Jemena and JAM can be used to demonstrate that the agreed price and margins are consistent with the lowest sustainable cost of delivering pipeline services without additional verifiable information. Further, as outlined above, the benchmarking studies proposed by

906 Wilson Cook report, p. 26.

907 Wilson Cook report, pp. 26–27.

908 Wilson Cook report, p. 26.

909 Wilson Cook report, pp. 12–13.

910 Wilson Cook report, pp. 12–13.

911 Benchmarking and total factor productivity studies are considered in section 9.6.7 of this chapter.

912 Wilson Cook report, pp. 18–20.

913 Wilson Cook report, p. 25.

Jemena to support these costs are not considered adequate for this purpose unless they are used to support a bottom-up analysis as outlined in the Wilson Cook report.⁹¹⁴

Therefore, the Wilson Cook report recommends using the lowest cost of the potential options as set out in the three bullet points above.⁹¹⁵ The AER's analysis of each of the options presented in the Wilson Cook report is set out below.

The expenditure considered prudent and reasonable by the IPART in 2005

The AER considers that the expenditure considered prudent and reasonable by the IPART in 2005 may be a useful starting point for assessing forecast expenditure. However, the IPART's assessment is now five years old and may not be representative of the required operating activities considered prudent for Jemena's network. Also, even if the scope of activities is considered relevant, the expected costs of such activities will not be consistent with the IPART's approved forecast five years ago.

The expenditure incurred in the base year by Jemena

The AER considers that the advantage of using the base year estimated actual expenditure is that it provides a recent and reliable estimate of actual network expenditure requirements. Coupled with a detailed analysis of activity that will not be required looking forward (one-off costs) in addition to new expected activity (step changes), this should result in a forecast that meets the requirements of r. 91 of the NGR. However, the AER notes that changes to Jemena's proposed expenditure requirements could, in most cases, only be substantiated by detailed information on the base year's activities and costs. This issue is considered further in the context of the assessment of Jemena's proposed step changes. Further, the AER has observed that the operating and maintenance expenditure reported as incurred base year expenditure includes the same margin as proposed under the AMA despite being a period prior to the introduction of the AMA.⁹¹⁶ As noted previously, the incurred base year expenditure for the administration and overhead category in Table 4.7 of the access arrangement information is incorrect, and as outlined the AER is concerned that the incurred expenditure reported for this category is not reliable.

The expenditure proposed by Jemena as the starting point for the access arrangement period

Jemena's proposed starting point appears to be based on the level of expenditure actually incurred in the 2008–09 base year.⁹¹⁷ Jemena, however, has transferred certain functions between expenditure categories and has re-cast certain expenditures in light of the services provided under the AMA and the allocation of responsibilities between Jemena and JAM expected to prevail during the access arrangement period. This includes a separate margin payable to JAM in addition to operating and maintenance costs incurred by JAM.⁹¹⁸ The AER does not consider the forecasts to be

914 Wilson Cook report, pp. 18–20.

915 Wilson Cook report, p. 27.

916 Jemena, *Access arrangement information*, August 2009, Forecast data model, opex summary, G17:G23 (confidential).

917 Jemena, *Access arrangement information*, August 2009, pp. 78–81.

918 Jemena, *Access arrangement information*, August 2009, p. 80 (confidential).

robust and well substantiated. This view is based on: (i) the errors and omissions in Jemena's access arrangement information; and (ii) the lack of detailed substantiation and description of various activity levels and costs within the operating and maintenance cost category.⁹¹⁹ Further, as outlined in section 9.6.4 the proposed expenditure, coupled with the proposed margin payable to JAM, has not been demonstrated to be consistent with the lowest sustainable cost of delivering the service as required by r. 91 of the NGR.

9.6.4.6 AER's conclusion on the base year costs

On balance, and in the absence of information from Jemena to support its access arrangement proposal, the AER considers that the option most likely to be consistent with the requirements of r. 91 of the NGR is the actual expenditure incurred in the identified base year, 2008–09, less one-off costs, plus approved step changes. The AER notes that the incurred expenditure includes Jemena's proposed margin.⁹²⁰ However, the AER agrees with the recommendation and reasons presented in the Wilson Cook report concerning the margin. The AER requires forecast operating expenditure to exclude the margin because Jemena does not substantiate its proposed expenditure with detailed information that clearly sets out that the margin and the underlying cost meet the requirements of r. 91 of the NGR.

The lack of substantiation also has consequences for the AER's assessment of Jemena's proposed step changes. The absence of information concerning the underlying activities and costs limits the ability of both the Wilson Cook report and the AER to make a conclusive assessment concerning the step changes proposed by Jemena.⁹²¹ This matter is discussed in section 9.6.4.7.

Table 9.4 sets out the AER's conclusion on base year costs compared to the three options presented in the Wilson Cook report: the IPART allowance; the incurred expenditure as reported by Jemena; and Jemena's proposed base year expenditure.

919 Wilson Cook report, pp. 12–13.

920 Jemena, *Access arrangement information*, August 2009, Forecast data model (confidential).

921 Wilson Cook report, p. 36.

Table 9.4: 2008–09 base year operating expenditure (\$m, real, 2009–10)

	The IPART allowed expenditure	Incurred expenditure ^a	Jemena's proposal	AER's conclusion ^b
Operating and maintenance base cost	82.1	77.9	c-i-c	71.4
Minus identified one-off costs			2.8	2.7
Plus operating and maintenance step changes ^c			3.7	1.2
Plus margin			c-i-c	0.0
Sub total	82.1	77.9	81.9	69.9
Administration and overhead base cost	21.9	24.0	23.2	23.0
Minus identified one-off costs			1.6	1.6
Plus administration and overhead step changes ^c			0.4	0.0
Sub total	21.9	24.0	22.0	21.3
Total base year expenditure	104.0	101.9	103.8	91.2

Source: Jemena, *Access arrangement information*, August 2009, pp. 47, 84, 93 and AER analysis of Jemena's operating expenditure model submitted with its access arrangement information.

- a: These figures are based on page 47 of Jemena's access arrangement information and includes error. Jemena has indicated in response to questions from the AER dated 18 December 2009 that 'JGN is currently working to complete the collation and external validation of its actual base year costs and will have this information available in the first quarter of 2010.'
- b: The AER conclusion is based on its analysis of Jemena's incurred expenditure within Jemena's operating expenditure model. The AER has removed the margin from incurred base year expenditure and updated inflation effects.
- c: The AER's consideration of proposed step changes follows in section 9.6.4.7.

9.6.4.7 Step changes

Jemena includes a number of new costs or 'step changes' in its operating expenditure forecasts from the earlier access arrangement period. Jemena forecasts a total of \$20.1 million (\$2009–10, real) of step changes in its operating and maintenance costs and \$2.3 million (\$2009–10, real) in its administration and overheads costs.⁹²²

Examples of these step changes are changes in standards and compliance requirements, and new asset types such as water bath heaters (WBH) with new operational and maintenance requirements.⁹²³

922 Jemena, *Access arrangement information*, August 2009, pp. 84, 93.

923 Jemena, *Access arrangement information*, August 2009, p. 81 and Jemena, *Access arrangement information*, August 2009, appendix 6.3.

In its submission, the EMRF provides an analysis of Jemena's proposed step changes.⁹²⁴ The EMRF submits that only exogenous costs (such as safety requirements)⁹²⁵ should be approved.⁹²⁶ In particular, the EMRF considers that there should be no substantive step changes resulting from the imposition of industry specific laws and regulations as these were in operation during the earlier access arrangement period.⁹²⁷

The Wilson Cook report discusses whether sufficient consideration is given to operating efficiencies in forecasting operating expenditure. The Wilson Cook report concludes that the methodology proposed by Jemena starting with base year costs to which cost escalators and step changes are applied, does not explicitly take into account efficiency improvements or potential cost savings and is likely to lead to a forecast of operating expenditure above an efficient level.⁹²⁸

The Wilson Cook report also notes the following:

- in a competitive market, businesses do not normally add to their own costs unless they are satisfied that there is a benefit to customers in terms of the product delivered or to the business in terms of efficiency. Regulation presumably ought to provide similar incentives for regulated businesses.
- businesses are dynamic, with variations occurring from year to year. Such variations ought not to form the basis of a proposal for a step change as the effect would be to allow costs to be passed on readily in contravention of the efficiency objective of the regulatory framework.⁹²⁹

The Wilson Cook report sets out criteria that it considers should be met before a step change is accepted. The Wilson Cook report describes two issues that should be considered by the AER in parallel to the criteria: (i) the base year expenditure should be adjusted for abnormal or one-off items; and (ii) the proposed step changes should not duplicate any allowance for workload escalation of inflation that separately apply. The Wilson Cook report step change criteria is as follows:⁹³⁰

For a step change to be accepted, the business should then be able to demonstrate that:

- (a) it is related to a fundamental change in the business environment arising from external factors or offset by cost efficiencies in other areas; or
- (b) it is attributable to the imposition of new or changed obligations due to external factors including, if relevant, mandated improvements in service levels (an extension of the interpretation of (a) above); or

924 EMRF, *Submission to the AER*, 9 November 2009, pp. 39, 40.

925 EMRF, *Submission to the AER*, 9 November 2009, p. 39.

926 EMRF, *Submission to the AER*, 9 November 2009, p. 40.

927 EMRF, *Submission to the AER*, 9 November 2009, p. 14.

928 Wilson Cook report, p. 30.

929 Wilson Cook report, p. 29.

930 Wilson Cook report, p. 30.

(c) it is of a type that will improve (as opposed to maintain) service levels voluntarily as opposed to being mandated – in respect of which customers’ willingness-to-pay for the improved service should be demonstrated (a further extension of the first criterion); or

(d) it will bring cost savings or benefits to customers – in respect of which, the business should be able to demonstrate that: (i) it is continually looking for better ways of using its resources and improving its processes and systems to improve service levels or achieve cost efficiencies; (ii) it has defined the savings and benefits in terms of their nature and the expected time if their realisation; and (iii) where the savings and benefits are quantifiable, they have been quantified in sufficient detail for cost-benefit analyses to be prepared and that the cost-benefit analyses justify the investment; or

(e) alternatively, if it does not meet any of these criteria, the business has demonstrated that it will continue to operate efficiently as a whole, despite the cost increase.

The AER considers that the criteria proposed in the Wilson Cook report are an effective means by which the proposed step changes can be tested against the requirements of r. 91 the NGR, and in particular, whether they are consistent with the lowest sustainable cost of delivering pipeline services. Accordingly, the AER has applied the criteria in its assessment of Jemena's proposed step changes.

With regard to the proposed step changes that include additional full time employees (FTEs) the Wilson Cook report considers that Jemena provides no evidence to demonstrate that:

- (1) the additional employees are needed exclusively for tasks related to the step changes;
- (2) that it is not possible for the work to be undertaken by existing staff by re-prioritisation or re-allocating their tasks; or
- (3) that the proposed additional staff will not fill other un-stated functions as well. To the contrary, the Wilson Cook report⁹³¹ notes that Jemena states that:⁹³²

JAM resources support multiple assets and that common resources are used to provide these services.

The Wilson Cook report further states its concern that there is no history of time recording and associated analysis to track and monitor time allocation within JAM, yet Jemena seeks to provide an assurance of efficient labour use and an assessment of additional labour unit requirements.⁹³³

In summarising its assessment of the proposed step changes the Wilson Cook report concludes that:

931 Wilson Cook report, p. 31.

932 Jemena, Response to AER Questions, 16 November 2009, question. 14.

933 Wilson Cook report, p. 31.

- the absence of substantiated forecast costs could be considered a ground for rejecting most or all of the proposed step changes
- in several cases the level of additional labour proposed fails to take into account possible efficiencies within the business and its related parties and failed to demonstrate that no such efficiencies were possible
- no detailed assessment of labour requirements generally within the business and its related parties had been provided in support of the stated need for additional FTEs
- the proposed increases in FTEs should not be assessed in isolation [from the underlying base year's expenditure] and that they should be reduced in the absence of adequate substantiation of need
- where reductions were recommended because of insufficient data was provided to make a calculation, an amount between the upper bound (the amount proposed by Jemena) and the lower bound (rejection, based on inadequate substantiation of need or cost) was considered reasonable.⁹³⁴

AER's conclusion on proposed step changes

The AER's consideration of each of Jemena's proposed step changes (including the application of the criteria proposed in the Wilson Cook report) is discussed below and is summarised in Table 9.5. Except where noted and for the reasons discussed, the AER agrees with the Wilson Cook report's reasoning and recommendation to accept, amend or reject each of the proposed step changes. As it outlines below, the AER considers that the proposed costs do not meet the operating expenditure criteria as set out in r. 91 of the NGR, have not been arrived at on a reasonable basis and in some instances do not represent the best estimate possible in the circumstances as required by r. 74(2) of the NGR.

Jemena is required to amend its forecast operating expenditure as set out in Table 9.5.

934 Wilson Cook report p. 36.

Table 9.5: Jemena's step changes

Proposed step change	Proposed annual cost (\$)	Additional FTEs	Cost attributed to additional FTEs (\$)	AER's conclusion	AER's assessment of annual costs(\$)
Formal safety assessments	400 000	2	220 000	amend	90 000
Safety management studies for primary mains and trunks	300 000	2	240 000	amend	30 000
Effects of upstream changes in pipeline, shipper and producer actions	20 000			reject	0
Increase in staff (JAM) training	400 000			reject	0
Implementation of STTM	300 000	2	300 000	reject	0
'Gas Make Whole' project	90 000	0.9	90 000	reject	0
Additional activities on regulatory accounts	50 000	0.3	30 000	reject	0
Inspection of exposed mains	500 000			accept	500 000
Repair of exposed mains	400 000			accept	400 000
Mains encroachment	125 000	1	125 000	reject	0
Painting (re-coating) of receiving, regulating and off-take stations ^a	520 000			reject	0
Pressure vessel repairs	300 000			amend	150 000
Existing water bath heater overhauls	60 000			reject	0
Future water bath heater sites	113 000			reject	0
Additional telecom. costs associated with increased volume of special readings	37 000			reject	0

Total (\$2009)	3 615 000		1 005 000		1 170 000
Total (\$2010)	3 705 375 ^b		1 030 125 ^b		1 211 860 ^c
Preparation of materials for ongoing compliance with NGR data requirements	152 000	0.33	152 000	reject	0
AMA contract management	273 000	2.5	273 000	reject	0
Total (\$2010)	4 130 375	11.03	1 455 125		1 211 860 ^c

Source: Jemena, *Access arrangement information*, August 2009, appendix 6.3 and Wilson Cook report p. 37.

a: Includes trunk receiving stations (TRS), primary regulating stations (PRS) and packaged off-take stations (POTS).

b: The inflation factor applied by Jemena is 2.5 per cent.

c: This is the AER's assessment of the total step change cost for 2009–10. For subsequent years of the access arrangement period this cost is escalated by the AER's approved cost escalators.

Safety assessments and safety management studies

Jemena proposes that it will undertake workshops on safety management studies and formal safety assessments to meet its technical regulation obligations under the Australian Standards for gas pipelines (AS2885.1 and AS4645).⁹³⁵

The Wilson Cook report considers that while the need for safety assessments and safety management studies is well established and workshops are an appropriate tool, it questions the need for additional FTEs proposed to conduct these workshops. Further, the Wilson Cook report considers there is no evidence to demonstrate that additional employees are required for these tasks or that the proposed additional staff will not fill other un-stated functions as well. It is possible for the work to be undertaken by existing staff through re-prioritisation or re-allocation of their tasks.⁹³⁶

The Wilson Cook report also states that Jemena does not provide a detailed substantiation of the daily rates per head for the proposed workshops. It considers that if the rates relate to wages, salaries, on-costs or overheads, then these costs would already have been recovered through the WOBCA or through the budget for operating and maintenance expenses. If, however, the costs relate to the incidental costs of running the workshops, the Wilson Cook report states that the proposed cost of \$0.25 million (\$2009) per annum appears excessive.⁹³⁷

The Wilson Cook report recommends that the workshop costs be adjusted by removing the additional FTE cost and in the absence of better information, reducing the allowance for incidental workshop costs.⁹³⁸

Impacts stemming from pipeline operators, producers and shippers

935 Jemena, *Access arrangement information*, August 2009, appendix 6.3, pp. 5, 6.

936 Wilson Cook report p. 32.

937 Wilson Cook report p. 32.

938 Wilson Cook report, p. 32.

Jemena submits that there has been an observed step change in the number of supply management incidents that are likely to be attributed to JAM no longer managing upstream gas transmission pipelines, and the introduction of ring fencing. It submits that this has changed the end-to-end management of both gas transmission and the Jemena network incident responses.⁹³⁹

The Wilson Cook report considers that if this proposed step change is driven by external factors then it might meet the criteria for a step change.⁹⁴⁰

The AER considers that this proposed step change should be accepted in principle as it is the result of what appears to be a commercial decision made in response to external factors. However, the AER considers that Jemena has not substantiated these costs and is unable to verify that the forecasts represent the best estimate arrived at on a reasonable basis as required by r. 74 of the NGR. In the absence of further substantiation by Jemena, the proposed step change is rejected.

JAM staff training

Jemena proposes that it will incur a step change in its forecast operating expenditure due to staff training about the business's safety and operational plan, its occupational health and safety obligations and its environmental obligations.⁹⁴¹

As noted in the Wilson Cook report, Jemena advised that this work had been out-sourced by the previous owner of the business and that as the results were considered unsatisfactory it was decided to re-build an internal team for this purpose.⁹⁴² The Wilson Cook report states that this step change might not be permanent, or that it might reduce over time and that it includes an element of catch-up.⁹⁴³

The Wilson Cook report also notes that Jemena provides no composition of these training costs, any indication as to whether the costs are only temporary or will be sustained indefinitely or if there are any savings from improvements made resulting from this training. Also, the Wilson Cook report considers that it is not clear that this training is driven by external factors. The AER notes that the other step change criteria have not been met. For these reasons the Wilson Cook report recommends that this step change should not be accepted.⁹⁴⁴

Short term trading market

Jemena submits that the introduction of the STTM will incur increased commercial management costs in the form of new balancing costs, increased likelihood of new gas supply arrangements and increased interface management.⁹⁴⁵

939 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 6.

940 Wilson Cook report, p. 31.

941 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 6.

942 Wilson Cook report, p. 32.

943 Wilson Cook report, p. 32.

944 Wilson Cook report, p. 32.

945 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 7.

As this proposed step change is driven by external factors it may meet the criteria for accepting a step change. However, the AER notes that the cost of this proposed step change relates to the cost for additional FTEs. As discussed earlier, the Wilson Cook report and the AER question the need for additional FTEs without further substantiation and reconciliation of these and other costs proposed in connection with the introduction of the STTM. Further, the AER cannot determine whether relevant labour costs are already included in the proposed operating expenditure forecasts.

Gas make whole project

Jemena submits that the change in ownership of its business and the separation of some of its functions have resulted in additional operating costs incurred by Jemena for its customer and maintenance management IT system.⁹⁴⁶

The Wilson Cook report suggests that these costs may not be permanent or that they may reduce over time and there may be savings elsewhere in the organisation to allow existing staff to deal with part or all of these tasks. Also the Wilson Cook report notes its concern as previously discussed with regard to an additional FTE whereby existing staff may deal with part or all of any such related tasks. Therefore the Wilson Cook report recommends that this step change is removed because it appears to relate to an internal and transitional matter and does not appear to meet the criteria for accepting a step change.⁹⁴⁷

Regulatory requirements under the NGR

Jemena proposes two step changes for regulatory costs in relation to annual information and reporting requirements under the NGR. The total cost of these step changes is \$202 000 (\$2009–10) per annum.⁹⁴⁸

The Wilson Cook report notes that the cost of this proposed step change is related to the partial addition of a FTE and that its concerns with regard to additional FTEs apply.⁹⁴⁹

While the AER understands that there may be some additional costs associated with the transition from the Code to the NGL, the AER considers that these costs are at most, likely to be incremental. The requirements for preparing and maintaining regulatory accounts for each covered pipeline and reporting ring fencing obligations has not changed markedly under the NGL. Any augmentation by the AER for the reporting of information during the access arrangement period would reduce compliance and regulatory costs as information would be maintained throughout the access arrangement period to meet the information requirements of the next access arrangement revision proposal. The Wilson Cook report has concerns about the nature of these step changes. Further, the AER considers that maintaining information throughout the access arrangement period will likely reduce the costs of preparation of the access arrangement proposal for the next access arrangement period. Therefore, the AER considers that these costs should be removed.

946 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 8.

947 Wilson Cook report, p. 33.

948 Jemena, *Access arrangement information*, August 2009, appendix 6.3, pp. 9, 14.

949 Wilson Cook report, p. 33.

Inspection of exposed mains

Jemena proposes to increase the inspection of exposed mains as the present inspection methods are considered to be ineffective.⁹⁵⁰

The Wilson Cook report notes that the reason for this step change is plausible but questions the proposed costs. It considers that Jemena has not substantiated its cost estimate and that the circumstances suggest an element of 'catch-up' suggesting that the step change should reduce over time. The Wilson Cook report notes that the proposed step change is not driven by external factors. However, it also notes that an argument could be made that the proposed step change will lead to an improvement in service levels (as opposed to maintaining them) and in turn comply with the proposed step change criteria. In conclusion the Wilson Cook report recommends that this step change be accepted.⁹⁵¹ On balance, the AER accepts the recommendation in the Wilson Cook report.

Repairs to exposed mains

Jemena submits that given the proposed increase in inspections of exposed mains it anticipates additional repair work arising from these inspections.⁹⁵²

The Wilson Cook report considers that Jemena has not substantiated the proposed costs associated with this step change. It is not able to reconcile the need for repair at only three major sites with the large number of inspections cited in support of the previous step change. Also the Wilson Cook report notes that the circumstances suggest an element of 'catch-up' suggesting that the step change ought to decline over time. Nonetheless, as with the preceding step change, the Wilson Cook report notes that the proposed step change is not driven by external factors. It recommends accepting the step change on the basis that an argument could be made that the proposed step change will lead to an improvement in service levels (as opposed to maintaining them) and in turn comply with the proposed step change criteria.⁹⁵³ On balance, the AER accepts the recommendation in the Wilson Cook report.

Encroachment

Jemena proposes a step change for the encroachment of urban development on the trunk and primary main routes.⁹⁵⁴

The Wilson Cook report considers that it is unclear whether this step change constitutes a new item for the business as opposed to 'business as usual'. It considers that if this item can be considered as 'business as usual' then the allowances for growth⁹⁵⁵ in the escalation of the operating and maintenance costs are sufficient without the need for this step change. Also, the Wilson Cook report notes its concern as previously discussed with regard to an additional FTE and that there is no mention of any savings that might be effected elsewhere in the organisation to allow existing staff to deal with part or all of any such related tasks. In conclusion, the Wilson Cook

950 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 9.

951 Wilson Cook report, pp. 33–34.

952 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 10.

953 Wilson Cook report, p. 34.

954 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 10.

955 See discussion of network growth affects on forecast operating expenditure in section 9.6.4.8.

report recommends that this step change should not be accepted because it does not meet the criteria for accepting a step change.⁹⁵⁶

Painting of receiving, regulating and off-take stations

Jemena proposes a step change related to the re-coating of external surfaces of trunk receiving stations, primary regulating stations and packed off-take stations. Jemena is proposing to recoat 40 out of a total of 80 sites over the access arrangement period.⁹⁵⁷

The Wilson Cook report considers that the reason for this step change is plausible but that the forecast operating expenditure estimates include internal support costs that may be recovered through the WOBCA. Also it notes that Jemena has not stated that the proposed costs are net of the cost of the spot repair programme that Jemena presently undertakes which are accounted for in the base year operating costs. In conclusion the Wilson Cook report recommends that this step change should not be accepted because it is not clear that this is a matter that is driven by external factors or that it will improve service levels (as opposed to maintaining them) and does not appear to meet the criteria for accepting a step change.⁹⁵⁸

Pressure vessel repairs

Jemena submits that it is required to remove aging pressure vessels from seven previously inaccessible sites.⁹⁵⁹

The Wilson Cook report notes that Jemena has not substantiated its cost estimate for this proposed step change and that the circumstances suggest that the step change might reduce over time in light of further experience. Also it considers that the matter appears to be related to external causes in part and therefore partially meets the criteria for accepting a step change. In conclusion, the Wilson Cook report recommends that this step change should be accepted at a reduced level in the absence of detailed information.⁹⁶⁰

Water bath heaters

Jemena proposes two step changes related to the six monthly overhaul of existing WBHs and the inspection and the overhaul of new WBHs to be installed during the access arrangement period.⁹⁶¹

The Wilson Cook report notes that Jemena has not substantiated its cost estimate for these proposed step changes and that because assets of this type are already installed in Jemena's network, it considers that the allowance for growth in the escalation of the operating and maintenance costs are sufficient without the need for these step changes. In conclusion, the Wilson Cook report recommends that these step changes should not be accepted.⁹⁶²

956 Wilson Cook report, p. 34.

957 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 11.

958 Wilson Cook report, pp. 34–35.

959 Jemena, *Access arrangement information*, August 2009, appendix 6.3, pp. 11, 12.

960 Wilson Cook report, p. 35.

961 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 14.

962 Wilson Cook report, p. 35.

Costs related to special meter readings

Jemena submits that as a result of changes to the retail environment it has experienced a considerable increase in the number of special meter readings in the last year compared to previous years.⁹⁶³

The Wilson Cook report states that if this proposed step change is driven by external factors then it might meet the criteria for accepting a step change. However, the Wilson Cook report also notes its concern as previously discussed with regard an additional FTE in this cost increase.⁹⁶⁴ Further, the AER notes that these costs may already be reflected in the base year incurred expenditure.

AMA contract management

Jemena submits that the new AMA with JAM will require active management and that additional resources will be required for this task.⁹⁶⁵

The Wilson Cook report questions the necessity and cost efficiency of proposing two additional FTEs for managing this contract, given its stated simplicity and transparency and the other overheads proposed in relation to the AMA. It notes that there is no indication as to whether the costs will be sustained indefinitely or only temporarily. Also the Wilson Cook report notes its concern as previously discussed with regard to additional FTEs. In conclusion the Wilson Cook report recommends that this step change should not be accepted because it does not meet the criteria for accepting a step change.⁹⁶⁶

The AER agrees with the Wilson Cook report's reasoning and recommendation to remove the proposed step change for the AMA contract management. Further, the AER questions whether this strategy, if driven by the Jemena Group, is shareholder in nature, that is, relates to the corporate and organisational structure of the Jemena Group and not the delivery of pipeline services so should therefore not be borne by users.

9.6.4.8 Network growth

Jemena submits that many of its operating activities and costs are forecast to grow in line with demand, including outsourced operating and maintenance activities which are driven by increases in customer connections and UAG and carbon costs which are a function of gas consumption.⁹⁶⁷

Jemena's proposed operating and maintenance costs are based on volumes of work orders arising from the National Institute of Economic and Industry Research's (NIEIR) forecast customer numbers and the market expansion capital expenditure plan. Jemena proposes that its and JAM's indirect costs will not grow as a consequence of increases in customer connections.⁹⁶⁸ Jemena also proposes a 'gas

963 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 14.

964 Wilson Cook report, p. 35.

965 Jemena, *Access arrangement information*, August 2009, appendix 6.3, p. 15.

966 Wilson Cook report, pp. 35–36.

967 Jemena, *Access arrangement information*, August 2009, p. 81.

968 Jemena, *Access arrangement information*, August 2009, p. 81.

demand and IT work growth' escalator to be applied to the IT component of operating and maintenance costs.⁹⁶⁹

The AER considers it appropriate that Jemena's forecast operating expenditure is adjusted for network growth. Jemena presented an overview of its model that is used to estimate volumes of work orders to Wilson Cook and the AER at a meeting on 16 October 2009.

The AER notes that Jemena's proposed network growth may be affected by two other elements of this draft decision: (i) the reduction to the capital expenditure forecast; and (ii) the increase to the demand forecast. The AER notes that these changes are likely to offset each other to some degree.

Notwithstanding the AER's assessment of the proposed base year costs, the AER considers that the approach taken by JAM to adjust Jemena's forecast expenditure to account for work orders arising from forecast customer numbers and the capital expenditure plan has been arrived at on a reasonable basis.

9.6.4.9 Cost escalators

For the reasons outlined in chapter 3, the AER is not satisfied that the proposed cost escalators comply with the requirements of r. 91 of the NGR and r. 74(2) of the NGR. As a result the AER requires Jemena to amend its forecast operating expenditure by applying the real cost escalators set out in amendment 9.1. The AER considers that, these escalators should be updated in the final decision to allow for consideration of changes in economic circumstances and updated data and meet the relevant rule requirements.

9.6.4.10 Summary of base year roll forward forecasts

Table 9.6 sets out the AER's draft decision on the expenditure categories forecast using a base year roll forward approach.

969 Jemena, *Access arrangement information*, August 2009, appendix 7.2, p. 17 (confidential).

Table 9.6: Summary of base year roll forward forecasts (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Operating and maintenance						
Base cost (net of one-off costs in base year)	68.7	68.7	68.7	68.7	68.7	343.5
Expenditure transferred from capital expenditure ^a	4.5	5.4	5.1	4.8	3.7	23.5
Step changes	1.2	1.2	1.2	1.3	1.3	6.2
Network and IT growth	0.2	1.1	2.6	2.8	3.6	10.3
Escalation	1.5	1.9	2.7	3.8	4.9	14.8
Site remediation ^b	0.0	0.0	0.0	0.0	0.0	0.0
Reduction in base IT component ^c	3.6	3.6	3.6	3.6	3.6	17.8
Total operating and maintenance costs	72.5	74.8	76.8	77.9	78.5	380.5
Administration and overhead						
Base cost (net of one-off costs in base year)	21.3	21.3	21.3	21.3	21.3	106.7
Step changes	0.0	0.0	0.0	0.0	0.0	0.0
Escalation	0.4	0.6	0.8	1.1	1.4	4.3
Total administration and overhead	21.8	21.9	22.1	22.4	22.7	111.0
Total base year roll forward forecast	94.3	96.6	98.9	100.3	101.3	491.4

Source: Jemena's operating expenditure forecast model as amended by the AER.

a: This matter is considered in section 9.6.5.2.

b: Site remediation has been forecast using a year-by-year specific approach and is considered in section 9.6.5.1.

c: Jemena indicated that the reduction in base IT costs in its operating expenditure forecast model is an error. As previously noted, corrections to Jemena's access arrangement proposal may be considered as part of its revised access arrangement proposal to be submitted after the AER's draft decision.

9.6.5 Specific year-by-year forecasts

The AER's analysis and consideration of Jemena's specific year by year forecasts is discussed below. With the exception of site remediation and marketing, the year-by-year specific forecasts are for cost categories generally considered to be 'non-controllable costs'.

9.6.5.1 Site remediation costs (a component of operating and maintenance expenditure)

Jemena proposes to include site remediation costs⁹⁷⁰ in its forecast operating and maintenance expenditure.⁹⁷¹ Jemena submits that the nature of these costs and the justification for these costs are confidential.⁹⁷² The AER notes that site remediation costs include a margin that is included as part of the operating and maintenance expenditure that reflects JAM's services to Jemena under the AMA (as they relate to operating expenditure).⁹⁷³

The AER considers that the proposed expenditure for site remediation does not meet the requirements of the NGL⁹⁷⁴ and NGR. Under r. 69 and r. 91 of the NGR operating expenditure is an expenditure incurred in the provision of pipeline services. Pipeline services are defined as haulage services, services for the interconnection of pipelines and ancillary services associated with haulage services, but does not include the production, sale or purchase of natural or processed gas.⁹⁷⁵ The AER considers that the proposed operating expenditure relates to the activities of **c-i-c** undertaken in an earlier access arrangement period by a former owner of the **c-i-c** site and not to the provision of pipeline services in the access arrangement period.

Given the above considerations, the AER does not propose to approve the site remediation costs proposed by Jemena and requires Jemena to amend its access arrangement proposal and information as outlined in amendment 9.6.

9.6.5.2 Proposed capital expenditure that the AER has included as operating expenditure (a component of operating and maintenance expenditure)

Jemena proposes to include expenditure for integrity digs and pigging, and for ad hoc mains and service renewals within its forecast capital expenditure program. Consistent with the recommendation in the Wilson Cook report, the AER considers that this expenditure should be included as operating expenditure rather than capital expenditure as no asset is created and the remaining life of existing assets is not expected to change as a result of the expenditure.⁹⁷⁶ Table 9.7 sets out the expenditure that the AER considers should be added to Jemena's forecast operating expenditure.

970 Jemena submits that due to legislative changes to the *Contaminated Land Management Act 1997 NSW* it has incurred liabilities with regard to the contamination of former gasworks sites it currently owns or leases. As a result Jemena is proposing remediation works at these contaminated sites which is forecast to cost \$5.1 million (\$2009–10) over the access arrangement period (confidential).

971 Jemena, *Access arrangement information*, August 2009, p. 93.

972 Jemena, *Access arrangement information*, August 2009, pp. 93–96 (confidential).

973 Jemena, *Access arrangement information*, August 2009, p. 93 (confidential).

974 NGL s. 2

975 NGL, s. 2.

976 Wilson Cook report, pp. 58, 62–63.

Table 9.7: Capital expenditure reclassified as operating expenditure (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Facilities renewal and upgrade – integrity digs and pigging	2.9	3.8	3.4	3.2	2.0	15.3
Mains and services renewals – ad hoc mains and services renewals	1.6	1.6	1.6	1.7	1.7	8.2
Total	4.5	5.4	5.1	4.8	3.7	23.5

Source: Jemena, *Access arrangement information*, August 2009, appendix 7.6 and Jemena, Response to AER 2 December 2009 questions – Tranche 2.

9.6.5.3 Marketing costs

Jemena submits that it changed its marketing strategy during the earlier access arrangement period from an incentive based approach targeted at NSW retailers, to the generic promotion of the use of natural gas. Jemena submits that it changed its strategy because the earlier approach was becoming less effective.⁹⁷⁷ Jemena received a larger allowance than it spent during the earlier access arrangement period.⁹⁷⁸ In this context, the AER considers it appropriate that Jemena has re-visited its marketing strategy.

Jemena’s proposed forecast operating expenditure for marketing is \$41.0 million (\$2009–10) over the access arrangement period. This is well above the actual and estimated marketing expenditure incurred over the earlier access arrangement period of \$25.7 million (\$2009–10).⁹⁷⁹ The AER also notes that over the access arrangement period, Jemena’s marketing expenditure is forecast to remain constant in real terms.⁹⁸⁰

The AER considers that the significant underspend of Jemena’s approved marketing expenditure over the earlier access arrangement period represents a windfall gain to Jemena rather than an improved operating efficiency as submitted by Jemena.⁹⁸¹ Jemena’s mischaracterisation of the marketing underspend as improved operating efficiencies has been identified in the EMRF submission, which anticipates that further efficiencies of this order can be achieved in the access arrangement period.⁹⁸² However, excluding the category of marketing, Jemena’s total operating expenditure

977 Jemena, *Access arrangement information*, August 2009, p. 87.

978 The IPART had approved marketing expenditure of \$98.1 million (\$2009–10) while Jemena expects to spend only \$25.7 million (\$2009–10) during the earlier access arrangement period. See Jemena, *Access arrangement information*, table 4.7, p. 47 for further information.

979 Jemena, *Access arrangement information*, August 2009, pp. 47, 84.

980 Jemena, *Access arrangement information*, August 2009, p. 84.

981 Jemena, *Access arrangement information*, August 2009, p. 75.

982 EMRF, *Submission to the AER*, 9 November 2009, p. 9.

actually exceeded the operating expenditure approved by the IPART in the earlier access arrangement period.⁹⁸³

In the context of this significant marketing underspend in the earlier access arrangement period and the lack of justification for an increase above the actual expenditure incurred in the base year, the AER considers that the proposed marketing expenditure is not consistent with r. 91 of the NGR. Therefore, the AER considers that Jemena's marketing expenditure should be maintained in real terms at the level of the estimated expenditure incurred in 2008–09 (i.e. \$6.5 million (\$2009–10)) for each year over the access arrangement period. This approach is consistent with the AER's approach for the base year roll forward costs. The AER notes that 2008–09 was the first full year in which Jemena's new marketing strategy was in place.⁹⁸⁴ As such, the AER considers that the 2008–09 incurred marketing expenditure is the best possible estimate⁹⁸⁵ of expenditure attributed to this marketing strategy over the following years of the access arrangement period.

The AER does not consider that Jemena's forecast marketing expenditure is consistent with r. 91 of the NGR and r. 74(2) of the NGR and requires Jemena to amend its forecast marketing operating expenditure as set out in amendment 9.4.

9.6.5.4 Government levies

Government levies comprises the NSW mains tax⁹⁸⁶ and the licence fee (or authorisation fee) payable to the IPART to recover regulatory costs.⁹⁸⁷

The AER notes that when compared to the earlier access arrangement period Jemena's total expenditure on government levies over the access arrangement period will be \$2.7 million (\$2009–10) or 14.5 per cent lower in real terms.⁹⁸⁸ This expenditure is forecast to remain constant in real terms over the course of the access arrangement period.⁹⁸⁹ This is primarily because of the different regulatory framework and consequential funding arrangements in place in the access arrangement period.

The AER considers that Jemena's forecast expenditure related to government levies meets the operating expenditure criteria as required by r. 91 of the NGR and has been arrived at on a reasonable basis and represents the best forecast or estimate possible in the circumstances, as required by r. 74(2) of the NGR.

983 Jemena, *Access arrangement information*, August 2009, p. 47.

984 Jemena, *Access arrangement information*, August 2009, p. 87.

985 As required by r. 74 of the NGR.

986 The AER notes that the majority of Jemena's forecast government expenditure is resulting from the NSW mains tax (confidential).

987 Jemena, *Access arrangement information*, August 2009, p. 86.

988 Jemena, *Access arrangement information*, August 2009, pp. 47, 84.

989 Jemena, *Access arrangement information*, August 2009, p. 84.

9.6.5.5 Unaccounted for gas

UAG is defined by Jemena as the difference between the total volume of gas received into the network and the total quantity delivered to customers.⁹⁹⁰ Jemena submits that it currently buys replacement gas through competitive tender. However for the access arrangement period, Jemena is proposing to replace or supplement this process with purchases made through the STTM.⁹⁹¹

Jemena submits that it is retaining the fixed target level of 2.1 per cent of total gas to calculate UAG volumes approved by the IPART in the earlier access arrangement period. Jemena submits that over the past three years reported UAG levels averaged 2.4 per cent which has resulted in financial loss to Jemena and⁹⁹² therefore a UAG level of up to 2.7 per cent is appropriate. Jemena provides confidential information about the factors contributing to UAG.⁹⁹³ It submits that these factors support its contention that UAG levels below 3 per cent are outside Jemena's control.⁹⁹⁴

Jemena proposes that to allow for a degree of flexibility actual UAG volumes that fall in a target range of 2.1 per cent to 2.7 per cent be compensated for in the annual tariff variation mechanism.⁹⁹⁵

The AER acknowledges that Jemena has made some progress in reducing its level of UAG largely attributed to the 'gold lining' project where old cast iron mains were lined with plastic.⁹⁹⁶ The EMRF submits that it would expect significant reductions in UAG due to the planned meter replacement program⁹⁹⁷ and raises doubts about the outcomes of the program if these savings do not occur.⁹⁹⁸

The AER engaged Wilson Cook to review the level of UAG forecast for Jemena's network. The Wilson Cook report concludes that given that the network has been substantially rehabilitated the best estimate of UAG levels expected over the access arrangement period is the actual level of UAG reported over the earlier access arrangement period.⁹⁹⁹

On this basis the Wilson Cook report recommends a forecast UAG level of 2.34 per cent which is the arithmetic average of actual UAG levels reported for the last five years.¹⁰⁰⁰

990 Jemena, *Access arrangement information*, August 2009, p. 88.

991 Jemena, *Access arrangement information*, August 2009, p. 89.

992 Jemena, *Access arrangement information*, August 2009, p. 89.

993 Jemena, *Access arrangement information*, August 2009, appendix 6.8: UAG target rate (confidential).

994 Jemena, *Access arrangement information*, August 2009, p. 89.

995 Jemena, *Access arrangement information*, August 2009, pp. 90, 209.

996 EMRF, *Submission to the AER*, 9 November 2009, pp. 48–49.

997 The AER notes that Jemena's proposed meter replacement program is to fulfil its technical regulation obligations and it is not a discretionary expenditure item.

998 EMRF, *Submission to the AER*, 9 November 2009, p. 43.

999 Wilson Cook report, p. 74.

1000 Wilson Cook report, p. 74.

Jemena has forecast UAG costs assuming a level of 2.1 per cent on the basis that it could recover costs if actual levels are within a target range that extends up to 2.7 per cent through a tariff variation mechanism. As discussed in chapter 13, the AER has not accepted the proposed UAG target range. As a result, the forecast UAG costs must represent the best estimate possible in the circumstances as required by r. 74 of the NGR.

The AER agrees with the Wilson Cook report's recommendation of a UAG forecast level of 2.34 per cent as it is a fair representation of Jemena's actual UAG levels observed in recent years. The AER considers that the recommended forecast level of UAG in the Wilson Cook report represents a reasonable basis to determine the best estimate or forecast possible in the circumstances, as required by r. 74(2) of the NGR.

With regard to the price of gas used to calculate the forecast cost of UAG, Jemena submits that it has used forecast wholesale NSW gas prices taken from an ACIL Tasman (ACIL) report¹⁰⁰¹ prepared for the National Electricity Market Management Company (NEMMCO).¹⁰⁰² The average of these forecast wholesale gas prices is \$5.50 per gigajoule (GJ) (\$2009–10) over the access arrangement period.¹⁰⁰³

The AER considers that ACIL's forecast wholesale gas prices represent a reasonable basis to determine the best estimate or forecast possible in the circumstances, as required by r. 74(2) of the NGR.¹⁰⁰⁴

The AER notes that Jemena's forecast UAG costs are expected to remain relatively constant in real terms over the access arrangement period.¹⁰⁰⁵

The AER also notes that submissions were received from AGL¹⁰⁰⁶ and EnergyAustralia¹⁰⁰⁷ regarding the unit cost for UAG and whether it should be measured against the cost of gas purchased through the STTM. As these submissions relate to the pass through of actual UAG costs the AER considers these submissions in chapter 13.

Given the change to the forecast UAG level discussed above, the AER has estimated Jemena's forecast UAG costs over the access arrangement period as set out in Table 9.8. This estimate is derived from:

1001 ACIL, *Fuel resource, new entry and generation costs in the NEM, Final report*, April 2009, p. 23.

1002 Jemena, *Access arrangement information*, August 2009, pp. 89–90.

1003 Average price calculated from forecast wholesale gas prices as presented in Jemena, *Access arrangement proposal*, August 2009, p. 78.

1004 The AER used forecast wholesale gas prices from this ACIL report to calculate UAG costs in its recent draft decisions for the Country Energy Wagga Wagga natural gas distribution network and the ActewAGL ACT, Queanbeyan and Palerang gas distribution network access arrangement proposals.

1005 Jemena, *Access arrangement information*, August 2009, p. 84.

1006 AGL, *Submission to the AER*, 10 November 2009, p. 5.

1007 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 9.

- ACIL's total demand forecast¹⁰⁰⁸, which the AER considers to have been arrived at on a reasonable basis and represents a best estimate or forecast possible in the circumstances, as required by r. 74(2) of the NGR. This is discussed in chapter 11
- a forecast level of UAG of 2.34 per cent¹⁰⁰⁹
- a UAG quantity calculated from ACIL's total demand forecast and a forecast level of UAG of 2.34 per cent
- ACIL's forecast wholesale NSW gas prices (delivered to Wilton)¹⁰¹⁰ sourced from a report prepared for NEMMCO.¹⁰¹¹

Table 9.8: Unaccounted for gas (units as stated)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Total demand forecast including UAG (TJ)	100 837	102 194	103 595	104 813	105 888	517 327
Forecast UAG (%)	2.34	2.34	2.34	2.34	2.34	
UAG quantity (TJ) = Total system demand x forecast UAG	2360	2391	2424	2453	2478	12 105
Delivered gas price (\$/GJ) (\$2009–10)	5.54	5.50	5.48	5.49	5.51	
Total UAG costs (\$m, real 2009–10) = UAG quantity x delivered gas price / 1000	13.1	13.2	13.3	13.5	13.7	66.6

Source: ACIL, *Review of demand forecasts for Jemena Gas Networks NSW*, 2 February 2010, pp. 32, 37, the AER's estimated forecast UAG level; For new CCGT NCEN, ACIL, *Fuel resource, new entry and generation costs in the NEM, Final report*, April 2009, p. 69.

The AER requires Jemena to amend its forecast UAG costs as outlined in amendment 9.4. Further, the AER notes that Jemena is proposing an adjustment to its annual tariff variation formula so that takes the difference between forecast and actual costs associated with UAG into account. As discussed in chapter 13, the AER does not approve this proposed adjustment to the tariff variation formula and proposes that the difference between forecast and actual costs associated with UAG be treated as a low materiality threshold cost pass through event.

1008 ACIL, *Review of demand forecasts for Jemena Gas Networks NSW*, 2 February 2010, pp. 32, 37.

1009 The AER considers this forecast level of UAG meets the requirements of r. 91 of the NGR and has been arrived at on a reasonable basis and represents the best estimate or forecast possible in the circumstances, as required by r. 74(2) of the NGR.

1010 ACIL, *Fuel resource, new entry and generation costs in the NEM, Final report*, April 2009, p. 69.

1011 The AER considers these forecast gas prices meet the requirements of r. 91 of the NGR and have been arrived at on a reasonable basis and represent the best estimate or forecast possible in the circumstances, as required by r. 74(2) of the NGR.

9.6.5.6 Carbon costs

Jemena submits that under the proposed CPRS Jemena will be required to procure carbon permits for the proportion of UAG that is estimated to be due to fugitive emissions (i.e. gas loss or leakage from the network).¹⁰¹²

Jemena proposes that carbon permit costs should be linked to UAG as an uncontrollable cost pass through allowance.¹⁰¹³ The AER's consideration of this proposed annual tariff variation adjustment is set out in chapter 13.

Jemena proposes operating expenditure for fugitive emissions based on a forecast fugitive emissions rate of 2.4 per cent and an assumed carbon price sourced from an ACIL report prepared for NEMMCO.¹⁰¹⁴ The AER notes that these costs are forecast to commence in 2011–12 and will increase significantly over the remainder of the access arrangement period.¹⁰¹⁵

The EMRF submits that given the uncertainty around the CPRS, any associated costs should be considered to be a pass through cost when the actual costs and Jemena's exposure to them can be better identified.¹⁰¹⁶

The AER agrees with this submission and considers it is more appropriate that these costs should be considered under a cost pass through mechanism.¹⁰¹⁷

Given the difficulty in forecasting CPRS costs because of uncertainty of the framework that will be adopted and the nature of costs that will arise as a consequence, the AER does not consider that Jemena's proposed operating expenditure for carbon costs meet the operating expenditure criteria as required by r. 91 of the NGR. Also the AER considers that the proposed expenditure has not been arrived at on a reasonable basis and does not represent the best forecast or estimate possible in the circumstances as required by r. 74(2) of the NGR.

The AER requires Jemena to amend its forecast operating expenditure as outlined in amendment 9.4 and amend its access arrangement proposal as set out in amendment 9.5.

9.6.5.7 Self insurance

Jemena proposes an annual \$2.5 million (\$2009–10) insurance premium for self insurance, totalling \$12.3 million (\$2009–10) over the access arrangement period.¹⁰¹⁸ Jemena submits that it faces self insurance costs for risks where:

1012 Jemena, *Access arrangement information*, August 2009, p. 88.

1013 Jemena, *Access arrangement information*, August 2009, p. 90.

1014 Jemena, *Access arrangement information*, August 2009, p. 91.

1015 Jemena, *Access arrangement information*, August 2009, p. 84.

1016 EMRF, *Submission to the AER*, 9 November 2009, p. 43.

1017 The AER notes this approach to the treatment of CPRS related costs as pass through costs is consistent with the AER's recent draft decisions for the Country Energy Wagga Wagga natural gas distribution network and the ActewAGL ACT, Queanbeyan and Palerang gas distribution network access arrangement proposals.

1018 Jemena, *Access arrangement information*, August 2009, p. 84.

- insurance is commercially available, but Jemena chooses not to take out coverage
- it has insurance coverage but faces residual risks associated with deductibles and caps on coverage
- insurance is not commercially available.¹⁰¹⁹

Jemena supports its proposed self insurance premiums by reference to a confidential report provided by Marsh Pty Ltd.¹⁰²⁰

Jemena did not seek operating expenditure for self insurance in its earlier access arrangement that was approved by the IPART.¹⁰²¹ Jemena's proposal raises for the first time a self insurance premium allowance for certain risk events.

The AER notes that self insurance for certain events has been considered previously by the Australian Competition Tribunal (Tribunal) in the GasNet decision¹⁰²² and the Australian Competition and Consumer Commission (ACCC).¹⁰²³ These decisions for gas transmission pipelines were considered under the Code. In addition to this, the AER has accepted operating expenditure for self insurance events under the National Electricity Code and the National Electricity Law.¹⁰²⁴

Self insurance is appropriate for the coverage of risks that may not be externally insured and are not otherwise provided for in another total revenue building block.

Jemena proposes self insurance for certain business risks. The AER's analysis and consideration of Jemena's self insurance allowance is provided in confidential Appendix C. The AER has assessed the proposal in accordance with r. 91 of the NGR and considers that Jemena has not adequately specified the relevance of the risks to its business or provided for a self insurance premium arrived at on a reasonable basis and does not represent the best forecast or estimate possible.¹⁰²⁵ The AER notes that in the circumstances of an adverse event occurring Jemena can vary its access arrangement

1019 Jemena, *Access arrangement information*, August 2009, p. 91.

1020 Jemena, *Access arrangement information*, August 2009, appendix 6.5 (confidential).

1021 The IPART, *Final decision: revised access arrangement for AGL Gas Networks*, April 2005.

1022 Australian Competition Tribunal, *Application by GasNet Australia (Operations) Pty Ltd* [2003] ACompT 6, 23 December 2003.

1023 ACCC, *Final decision, revised access arrangement by GasNet Australia (Operations) Pty Ltd and GasNet (NSW) Pty Ltd for the principal transmission system*, 30 April 2008; ACCC, *Draft decision, revised access arrangement by GasNet Australia Ltd for the principal transmission system*, 14 November 2007; ACCC, *Final decision, GasNet Australia access arrangement revisions for the principal transmission system*, 13 November 2002.

1024 AER, *Final decision: New South Wales distribution determination 2009–10 to 2013–14*, April 2009; AER, *Final decision: Australian Capital Territory distribution determination 2009–10 to 2013–14*, April 2009; AER, *Final decision: TransGrid transmission determination 2009–10 to 2013–14*, April 2009; AER, *Final decision: SP AusNet transmission determination 2008–09 to 2013–14*, January 2008; AER, *Final decision: Powerlink Queensland transmission network revenue cap 2007–08 to 2011–12*, June 2007; AER, *Draft Decision: ElectraNet transmission determination 2008–09 to 2012–13*, November 2007; ACCC, *Final decision, NSW and ACT transmission network revenue cap TransGrid 2004–05 to 2008–09*, April 2005.

1025 NGR, r. 74(2).

or in some cases seek a cost pass through in order to recover the cost of the adverse event.

The AER requires Jemena to amend its forecast operating expenditure as outlined in amendment 9.4.

9.6.5.8 Debt raising costs

Debt raising costs are costs which are incurred each time debt is raised or refinanced. These costs may include underwriting fees, legal fees, company credit rating fees and other transaction costs. The AER has previously accepted that debt raising costs may be a legitimate expense for which a distribution network service provider (DNSP) should be provided an allowance.¹⁰²⁶

Jemena proposes debt raising costs of 0.125 per cent (12.5 basis points) of its assumed total debt—that is, the benchmark gearing ratio multiplied by the capital base—per annum.¹⁰²⁷ Debt raising costs are forecast to increase on average by 2.8 per cent per annum in real terms over the access arrangement period,¹⁰²⁸ in line with forecast movement in the capital base, with total debt raising costs of \$9.5 million across the access arrangement period. Jemena does not submit any evidence to support this estimate of the debt raising cost unit rate.

Consistent with previous decisions, the AER considers that an approach based on the Allen Consulting Group's (ACG) methodology produces the best estimate of debt raising costs.¹⁰²⁹ This includes recent refinements to this methodology to update the selection of bonds, amortise up front costs, index fixed costs and update the benchmark issue size.¹⁰³⁰ The ACG methodology is based on Medium Term Note (MTN) issuance costs as the proxy for direct debt raising costs incurred by the benchmark firm.¹⁰³¹ It considers only bonds issued in the last five years, so as to produce an estimate commensurate with prevailing market conditions.¹⁰³²

The direct debt raising cost is dependent on the number of standard sized debt issues required by the business and the nominal vanilla WACC applying to the business (to

1026 AER, *Decision: Powerlink Queensland transmission network revenue cap 2007–08 to 2011–12*, 14 June 2007, pp. 94–97; AER, *Final decision: SP AusNet transmission determination 2008–09 to 2013–14*, January 2008, pp. 148–150 and AER, *Final decision: ElectraNet transmission determination 2008–09 to 2013–14*, 11 April 2008, pp. 84–85.

1027 Jemena, *Access arrangement information*, August 2009, p. 92.

1028 Jemena, *Access arrangement information*, August 2009, p. 84.

1029 ACG, *Debt and equity raising costs: Final report to the ACCC*, December 2004.

1030 AER, *Draft decision: Queensland draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix L: *Benchmark debt raising costs*, pp. 713–738 and AER, *Draft decision: South Australia draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix I: *Benchmark debt raising costs*, pp. 507–532.

1031 AER, *Draft decision: Queensland draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix L: *Benchmark debt raising costs*, pp. 718–719 and AER, *Draft decision: South Australia draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix I: *Benchmark debt raising costs*, pp. 512–513.

1032 AER, *Draft decision: Queensland draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix L: *Benchmark debt raising costs*, pp. 724–730 and AER, *Draft decision: South Australia draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix I: *Benchmark debt raising costs*, pp. 518–530.

be incorporated in the amortisation calculation). Table 9.9 shows the AER's indicative debt raising cost derivation based on a nominal vanilla WACC of 10.19 per cent.

Table 9.9: Indicative direct debt raising costs

Fee	Explanation	1 Issue	3 Issues	6 Issues	12 Issues
Amount Raised	Multiples of median MTN (\$263 million)	\$263 million	\$789 million	\$1 578 million	\$3 156 million
1. Gross underwriting fee	Median gross underwriting spread, up front per issue	7.34	7.34	7.34	7.34
2. Legal and roadshow	\$115 000 upfront per issue	0.72	0.72	0.72	0.72
3. Company credit rating	\$50 000 per annum	1.90	0.63	0.32	0.16
4. Issue credit rating	4 basis points up front per issue	0.66	0.66	0.66	0.66
5. Registry fees	\$3500 up front per issue	0.13	0.13	0.13	0.13
6. Paying fees	\$4 per \$1 million in debt per annum	0.04	0.04	0.04	0.04
Total	Basis points per annum (bppa)	10.8	9.5	9.2	9.0
Previous value (2008 update)	Number of \$200 million issues	1 issue	4 issues	8 issues	16 issues
	Bppa	10.4	8.5	8.2	8.0

Source: ACG, *Debt and equity raising costs: Final report to the ACCC*, December 2004; Bloomberg; AER analysis.

Jemena has an opening capital base of around \$2.3 billion. On the basis of the assumed benchmark gearing of 60 per cent, the notional debt component of Jemena's opening capital base is around \$1.4 billion. Based on the ACG methodology, this debt size would require around 6 bond issues. The nominal vanilla WACC for Jemena is 10.19 per cent. In the circumstances, the AER considers that an allowance of 9.2 bppa for debt raising costs is a reasonable benchmark for Jemena. This benchmark is multiplied by the debt component of Jemena's capital base to derive an average allowance of \$1.27 million per annum (\$2009–10). The calculation of this allowance is shown in Table 9.10.

Table 9.10: AER's conclusion on debt raising costs (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Jemena proposed debt raising costs	1.79	1.85	1.90	1.95	2.00	9.49
AER's conclusion	1.25	1.26	1.27	1.28	1.29	6.36

Source: AER analysis and Jemena, *Access arrangement information*, August 2009, p. 84.

The AER considers that the debt raising cost is consistent with the expenditure that would be incurred by a prudent service provider acting efficiently, in accordance with r. 91 of the NGR. The AER also considers that the revised costs are arrived at on a reasonable basis and represent the best estimate possible in the circumstances as required by r. 74 of the NGR. The AER requires Jemena to amend its debt raising costs as outlined in amendment 9.4.

9.6.5.9 Equity raising costs

Equity raising costs—such as legal fees, marketing costs and other transaction costs—are incurred in raising new equity capital. The AER has accepted that equity raising costs are a legitimate cost for a benchmark efficient firm only where cheaper sources of funding—for example, retained earnings—are insufficient, subject to the gearing ratio and other assumptions about financing decisions being consistent with regulatory benchmarks.¹⁰³³

Jemena proposes that equity raising costs be estimated at differing unit rates depending on the source of funding:¹⁰³⁴

- 1 per cent of equity raised via dividend reinvestment plans
- 2.75 per cent of equity raised externally via seasoned equity offerings (SEO).

To determine the amount of equity required from each of these sources, Jemena submits that the benchmark equity raising costs be calculated using a dividend payout ratio of 70 per cent and a take-up rate for the dividend reinvestment plan of 30 per cent.¹⁰³⁵ Based on these assumptions, Jemena proposes no allowance for equity raising costs as the amount is immaterial. However, Jemena proposes to revisit this matter should the underlying assumptions change.¹⁰³⁶

1033 AER, *Decision: Powerlink Queensland transmission network revenue cap 2007–08 to 2011–12*, 14 June 2007, p. 100; AER, *Final decision: SP AusNet transmission determination 2008–09 to 2013–14*, January 2008, p. 144 and AER, *Final decision: ElectraNet transmission determination 2008–09 to 2013–14*, 11 April 2008, p. 88.

1034 Jemena, *Access arrangement information*, August 2009, p. 92.

1035 Jemena, *Access arrangement information*, August 2009, p. 92.

1036 Jemena, *Access arrangement information*, August 2009, p. 93.

The AER notes that the unit rates Jemena proposes are consistent with the April 2009 final decisions for electricity distribution and transmission businesses.¹⁰³⁷ Since April 2009, the AER has updated its analysis of the equity raising unit rates, using data from 2007 to 2009 in order to ensure that the estimate is commensurate with prevailing market conditions.¹⁰³⁸ The AER considers that the current best estimate of costs is based on the following assumptions:

- 1 per cent of equity is raised via dividend reinvestment plans¹⁰³⁹
- 3 per cent of equity is raised externally via SEO.

The AER notes that the use of a hierarchy of equity raising methods is consistent with the benchmark cash flow analysis implemented previously by the AER.¹⁰⁴⁰ The AER considers that the benchmark firm sets dividends with regard to the distribution of imputation credits to shareholders. The AER considers that 100 per cent of imputation credits should be paid out in each year, consistent with the gamma value of 0.65 adopted in this decision.¹⁰⁴¹

While the AER has not been provided with Jemena's cash flow analysis concerning equity raising costs, the AER accepts Jemena's submission that in the context of its expected capital expenditure program and other cash flows, benchmark equity raising costs are expected to be immaterial. This is because the proposed capital program is expected to be funded through retained earnings. On this basis, equity raising costs would not be incurred by a prudent service provider acting efficiently, in accordance with accepted good industry practice, to achieve the lowest sustainable cost of delivering pipeline services as required by r. 91 of the NGR.

9.6.6 Operating expenditure during the access arrangement period

As outlined above, Jemena outsources its operating and maintenance expenditure to JAM in accordance with the AMA.¹⁰⁴² As a result of this, many of the costs that

1037 AER, *Final decision: Australian Capital Territory distribution determination 2009–10 to 2013–14*, 28 April 2009, appendix H; AER, *Final decision: New South Wales distribution determination 2009–10 to 2013–14*, 28 April 2009, appendix N; AER, *Final decision: TransGrid transmission determination 2009–10 to 2013–14*, 28 April 2009, appendix E; AER, *Final decision: Transend transmission determination 2009–10 to 2013–14*, 28 April 2009, appendix E.

1038 AER, *Draft decision: Queensland draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix M: *Benchmark equity raising costs*, pp. 768–775 and AER, *Draft decision: South Australia draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix J: *Benchmark equity raising costs*, pp. 562–569.

1039 The AER notes the EMRF, Submission to the AER, November 2009, p. 44 states that commercial businesses do not charge themselves for using internal cash flows for capital expenditure. The AER notes that the benchmark figure of 1 per cent is an estimate (albeit conservative) of the cost of administering a dividend reinvestment plan. The benchmark figure was derived from relevant annual reports – see AER, *Draft decision: Queensland draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix M: *Benchmark equity raising costs*, pp. 768–771 and AER, *Draft decision: South Australia draft distribution determination 2010–11 to 2014–15*, 30 November 2009, appendix J: *Benchmark equity raising costs*, pp. 562–565.

1040 AER, *Final decision: New South Wales distribution determination 2009–10 to 2013–14*, 28 April 2009, appendix N, pp. 194 (table 8.18), 579–587.

1041 AER, *Final decision: New South Wales distribution determination 2009–10 to 2013–14*, 28 April 2009, appendix N, pp. 583–584.

1042 Jemena, *Access arrangement information*, August 2009, p. 30 (confidential).

would normally be incurred directly by the service provider are incurred by JAM under the AMA. In the proposed access arrangement period, these costs account for more than half of Jemena's total operating expenditure.¹⁰⁴³

Although the costs account for a significant proportion of the total proposed operating expenditure, the fees have been reported in an aggregated manner.¹⁰⁴⁴ The AER sought further information from Jemena to identify these costs. Jemena, however, did not provide disaggregated forecasts instead stating that the base year roll forward approach to forecasting is inherently aggregate in nature.¹⁰⁴⁵

In support of its proposed forecast operating expenditure, Jemena provides several benchmarking and productivity studies (benchmarking studies) to demonstrate that its operating costs are efficient. Two of these reports are provided to the AER on a confidential basis,¹⁰⁴⁶ while a third report is not confidential and is provided as an appendix to Jemena's proposed access arrangement information.¹⁰⁴⁷

Benchmarking and productivity studies

As outlined earlier, Wilson Cook reviewed these benchmarking studies as part of its assessment of Jemena's proposed operating expenditure.¹⁰⁴⁸ The Wilson Cook report identifies several issues with these benchmarking studies.¹⁰⁴⁹

Concerning the Jemena Gas Network Performance Benchmark Study, FY2000–FY2008, the Wilson Cook report concludes that this study only reviewed the operational performance of the Jemena and ActewAGL Distribution gas networks, benchmarked against other gas distributors in Australia using data from regulatory reports. This study does not examine operating expenditure.¹⁰⁵⁰

The Wilson Cook report also notes concerns with the Benchmarking Report for Jemena Gas Network, submitted to the AER on 10 November 2009.¹⁰⁵¹ The Wilson Cook report states that it is apparent that the benchmarking relates to a period substantially prior to the proposed base year. The report notes that, if this is correct, Jemena's costs in the benchmarking may differ from those in the base year upon which projections in the next period are based.¹⁰⁵²

Also in regard to this study, the Wilson Cook report further notes the view that differing network ages are unlikely to have a significant impact on benchmarking. In

1043 Jemena, *Access arrangement information*, August 2009, p.75.

1044 Jemena, *Access arrangement information*, August 2009, p.93 (confidential).

1045 Jemena, Response to AER 2 December 2009 questions–Tranche 1, 7 December 2009, p. 6.

1046 Jemena, *Jemena Gas Network Performance Benchmark Study, FY2000–FY2008*, May 2009 (confidential) and Jemena, *Submission to the AER*, 10 November 2009, appendix 7: JAM, *Benchmarking Report for Jemena Gas Network*, 11 September 2009 (confidential).

1047 Jemena, *Access arrangement information*, August 2009, appendix 6.7: Economic Insights, *The Productivity Performance of Jemena Gas Networks' NSW Gas Distribution System*.

1048 Wilson Cook report pp. 18–20.

1049 Wilson Cook report pp. 19–20.

1050 Wilson Cook report p. 19.

1051 Jemena, *Submission to the AER*, 10 November 2009, appendix 7 (confidential).

1052 Wilson Cook report p. 19.

spite of this, concerns were raised that the benchmarking study did not present any analysis in this regard.¹⁰⁵³

Jemena provides a productivity study by Economic Insights as appendix 6.7 to the access arrangement information. This study assesses input productivity for Jemena's historic and forecast operating expenditure, and concludes that Jemena is relatively efficient compared to the three Victorian gas distribution businesses.¹⁰⁵⁴

In regards to the nature of the Economic Insights report, the Wilson Cook report notes that total and partial factor productivity concepts have been applied in Australia for over ten years. The Wilson Cook report notes that it can be accepted that the report provides a supporting opinion that Jemena has obtained value for money for its past operating expenditures and, without evidence to the contrary, is likely to continue to do so.¹⁰⁵⁵

The Wilson Cook report notes that benchmarking is likely to be less robust if dissimilar entities are compared, or if related party transactions are involved. In the case of related party transactions, it is possible that the comparisons may be made with entities whose efficiencies are not so readily demonstrated.¹⁰⁵⁶

The Wilson Cook report concludes, that while these studies support claims that Jemena operates with a cost structure within the levels of confidence, benchmarking is best presented as an accompaniment to other substantiating analyses of operating costs. The Wilson Cook report affirms that the lack of a bottom up analysis of operating costs related directly to the cost-efficiency of the services offered and supporting this finding should be noted.¹⁰⁵⁷ The AER agrees with this statement.

Has Jemena appropriately substantiated its forecast operating and maintenance expenditure?

As outlined above, despite the supporting benchmarking studies, Jemena has provided limited information, and this information is confined to the base year operating and maintenance expenditure. The information in the access arrangement information provides only an outline of a base cost, step changes, site remediation costs and a margin.¹⁰⁵⁸

The exact nature and amount for the base costs and step changes are not readily discernable. The AER has been unable to verify that the proposed base year costs for operating and maintenance expenditure are consistent with r. 91 of the NGR. For example, it is possible that certain costs within operating expenditure would not be expected to recur annually. Further, the notion that base year's expenditure represents efficient expenditure (on the basis that the service provider actually incurred those costs while it had the incentive to operate efficiently), is not reasonable given the

1053 Wilson Cook report p. 19.

1054 Jemena, *Access arrangement information*, August 2009, p. 76.

1055 Wilson Cook report pp. 18–19.

1056 Wilson Cook report p. 19.

1057 Wilson Cook report p. 20.

1058 Jemena, *Access arrangement information*, August 2009, p. 93.

related party transactions between Jemena and JAM. However, the AER also notes that aggregate operating expenditure in the proposed base year is closely aligned with the operating expenditure approved by the IPART once the substantial marketing underspend is taken into account.¹⁰⁵⁹

The Wilson Cook report also has concerns regarding the level of information disclosed by Jemena. Regarding Jemena's proposed operating expenditure, the Wilson Cook report states that 'given that the management costs of the various entities involved are likely to be highly integrated, we consider it might be very difficult to break them down in a way that would support an assessment of efficiency of service delivery without a detailed bottom-up analysis of the costs being available'.¹⁰⁶⁰

The AER also has concerns regarding the limited information detailing how Jemena regards the effectiveness of JAM's management of the network. The AER notes that to identify whether services have been carried out in accordance with good industry practice, the AMA includes 'incentive provisions' such as JAM's entitlement to recover efficient costs only, the asset management plan and budget approval processes, service performance measures (SPMs), and the risk and benefit sharing mechanism (RBSM).¹⁰⁶¹ Although these are included in the 2009 AMA,¹⁰⁶² it remains unclear as to how effective JAM's management of the network has been in the past, and whether these new mechanisms will encourage JAM to improve its performance.

It is also unclear whether an alternative service provider, if given the opportunity, would be able to offer these services at a lesser (more efficient) price. Jemena has stated that the negotiation framework for the AMA 'followed standard commercial practices for competitively tendering work'.¹⁰⁶³ However, both the AER and Wilson Cook share concerns about this. These concerns include the bilateral nature of the negotiations, implying that no other party was invited to tender, and the fact that the negotiations were undertaken between two related entities.¹⁰⁶⁴

Overall, the level of detail provided by Jemena regarding the base year and forecast costs is not sufficient for the AER to make an accurate and informed decision in regards to the operating expenditure requirements in the NGR. Further users are not provided with sufficient background and details about the nature of costs or how they are derived.¹⁰⁶⁵ Although the base year costs are not significantly different to that approved by the IPART,¹⁰⁶⁶ the AER considers that the lack of detailed information encompassing the underlying nature of the cost categories limits its ability to make a thorough assessment of operating expenditure against the criteria in r. 91 of the NGR.

1059 Jemena, *Access arrangement information*, August 2009, p. 47.

1060 Wilson Cook report, p. 13.

1061 Jemena, *Access arrangement information*, August 2009, pp. 35–37 (confidential).

1062 Jemena, *Access arrangement information*, August 2009, pp. 35–37 (confidential).

1063 Jemena, *Access arrangement information*, August 2009, p. 26.

1064 Wilson Cook report, p. 20.

1065 Service providers are required to provide details in their access arrangement information reasonably necessary for users and prospective users to understand the background to the access arrangement under r. 42(1) of the NGR.

1066 Jemena, *Access arrangement information*, August 2009, p. 47.

Statement of costs

For future assessments under r. 91 of the NGR, the AER will require a better understanding of the costs that are to be incurred by Jemena. As a consequence, the AER has developed an information template in the form of a 'statement of costs' (Appendix D) for Jemena to complete for each year of the access arrangement period. Jemena will be required to submit a completed statement of costs with its next access arrangement revision proposal.

The 'statement of costs' sets out more detailed cost categories, consistent with cost categories Jemena uses to support its operating expenditure proposal. While being mindful of the compliance costs the 'statement of costs' would impose on Jemena, the AER considers that the enhanced level of detail is necessary to make an informed assessment under the NGR, particularly given the business model under which Jemena operates.

Costs arising from third parties, and routed through JAM, will need to be separately documented. This will allow the AER to identify where costs are the result of a competitive tender or whether another form of substantiation is required to demonstrate that the proposed costs are efficient and consistent with r. 91 of the NGR.

Accordingly, the 'statement of costs' has been separated into two sections, namely 'O&M Opex (JAM Asset Management Services)' and 'Non O&M Opex (Jemena Direct Costs)'. The O&M Opex section has then been further broken down into 'Direct JAM Costs' and 'Indirect JAM Costs'. 'Direct JAM Costs' mainly consist of costs directly attributable to work JAM has performed on behalf of Jemena, whereas 'Indirect JAM Costs' consist of costs passed through JAM to Jemena in relation to activities that JAM has outsourced on behalf of Jemena. These indirect costs also include corporate head office costs allocated under WOBCA. The Indirect JAM costs will mainly be concerned with Jemena Group costs, as well as other subcontractor costs.

Jemena's subcontracted costs will also need to be sufficiently detailed and identified, to enable the AER to identify all costs that relate to the provision of pipeline services as defined in s. 2 of the NGL, and verify that costs that are not associated with the provision of pipeline services are excluded from operating expenditure forecasts.

The AER will also use the 'statement of costs' to assess Jemena's compliance with its obligations under r. 93(2) of the NGR. As Jemena currently has non-reference services, it is also necessary for the AER to verify that the costs associated with non-reference services are separately identified and maintained from the costs related to reference services. For this reason the 'statement of costs' includes a column for the percentage of costs allocated to reference services.

In relation to the AMA, Jemena states that the 'new outsourcing [arrangement] would ensure that over successive years JGN has access to the underlying cost information for activities that it outsources'.¹⁰⁶⁷ The AER considers that this additional underlying cost information could assist Jemena in preparing the 'statement of costs'.

¹⁰⁶⁷ Jemena, *Access arrangement information*, August 2009, p. 32 (confidential).

The AER considers that the information contained in the ‘statement of costs’ is required to assess if operating expenditure is such as would be incurred by a prudent service provider acting efficiently, in accordance with good industry practice, to achieve the lowest sustainable cost of delivering pipeline services as required by r. 91 of the NGR. Appendix D of the draft decision outlines the nature and level of detail of information required to be maintained by Jemena in the ‘statement of costs’.

The AER also requires further information relating to JAM’s management of the network and its ability to meet KPIs and other targets set by Jemena. As discussed above, Jemena has outlined specific ‘incentive provisions’ contained within the AMA which are in place to encourage delivery of required performance levels and achievement of lowest sustainable costs.¹⁰⁶⁸ The application of the ‘incentive provisions’ is dependent on Jemena’s assessment of JAM’s performance.

Jemena states that ‘at the end of each year, the SPM performance of JAM in respect of each service group compared to the target cost estimate is assessed’.¹⁰⁶⁹ It is the AER’s understanding that such annual assessments will form the basis of whether JAM has fulfilled Jemena’s expectations in regard to the ‘incentive provisions’ and also whether JAM will be entitled to an additional performance margin under the AMA.

The AER will require details of Jemena’s assessment of JAM’s performance to be provided with the next access arrangement revision. This includes details of:

- JAM’s efficiency targets as set out in the Asset Management Plan and budget approval processes¹⁰⁷⁰
- actual costs achieved against budgets
- any overruns authorised by Jemena as being efficient¹⁰⁷¹
- JAM’s performance in regards to the RBSM including service level performance against the predetermined thresholds¹⁰⁷²
- the basis in which the performance margin was calculated and applied.¹⁰⁷³

Such information will assist the AER to make a decision as to whether underlying activities carried out by JAM are consistent with the requirements under r. 91 of the NGR.

This information is to be maintained over the access arrangement period and be updated on an annual basis. This is outlined in amendment 9.8.

1068 Jemena, *Access arrangement information*, August 2009, pp. 35-37 (confidential).

1069 Jemena, *Access arrangement information*, August 2009, p. 39 (confidential).

1070 Jemena, *Access arrangement information*, August 2009, p. 36 (confidential).

1071 Jemena, *Access arrangement information*, August 2009, p. 36 (confidential).

1072 Jemena, *Access arrangement information*, August 2009, pp. 36–37 (confidential).

1073 Jemena, *Access arrangement information*, August 2009, p. 39 (confidential).

9.6.7 Summary

As outlined above, the AER does not consider that the forecast operating expenditure proposed by Jemena complies with r. 91 of the NGR and it accordingly requires it to:

- use its actual expenditure incurred in the identified base year, 2008–09 (less identified one-off costs) as a basis for forecasting its operating expenditure
- remove the margin that is applied to expenditure in the operating and maintenance category
- reduce its proposed total step change annual cost to \$1 211 860 (\$2009–10)¹⁰⁷⁴ as detailed in section 9.6.4.7
- apply the AER determined real cost escalators in place of those applied by Jemena
- remove site remediation costs from the forecast operating expenditure
- include expenditure for integrity digs and pigging, and for ad hoc mains and service renewals in the forecast operating expenditure (rather than as proposed in the forecast capital expenditure)
- reduce its proposed marketing expenditure to the level of the estimated expenditure incurred in 2008–09 (i.e. \$6.5 million (\$2009–10)) for each year over the access arrangement period
- apply the AER determined forecast of UAG cost based on a different level of UAG
- remove carbon costs from the forecast operating expenditure
- remove the forecast operating expenditure for self insurance¹⁰⁷⁵
- estimate the debt raising costs by applying a benchmark rate of 9.2 bppa to the AER's approved capital expenditure and the resultant capital base in each year of the access arrangement period.

Jemena's forecast operating expenditure as amended by the AER is set out in Table 9.13. The AER also requires Jemena to create, maintain and keep a 'statement of costs' in order to obtain detailed information on the costs incurred from JAM in the access arrangement period. The AER will require details of Jemena's assessment of JAM's performance to be provided with the next access arrangement revision. This includes details of:

- JAM's efficiency targets as set out in the Asset Management Plan and budget approval processes¹⁰⁷⁶

1074 This is the AER's assessment of the total step change cost for 2009–10. For subsequent years of the access arrangement period this cost is escalated by the AER's approved cost escalators.

1075 The AER notes that many of the proposed risks to be covered by self insurance may be appropriately considered as a cost pass through rather than self insurance.

- actual costs achieved against budgets
- any overruns authorised by Jemena as being efficient¹⁰⁷⁷
- JAM’s performance in regards to the RBSM including service level performance against the predetermined thresholds¹⁰⁷⁸
- the basis in which the performance margin was calculated and applied.¹⁰⁷⁹

9.7 Conclusion

The AER does not propose to approve the forecast operating expenditure proposed by Jemena as it does not comply with r. 91 of the NGR and requires Jemena to make the amendments set out below.

9.8 Amendments required to the access arrangement proposal

Before the proposed access arrangement can be approved, Jemena must make the following amendments:

Amendment 9.1: amend the access arrangement information to delete Table 6-4 and replace it with the following:

Table 9.11: Opex escalation factors for JGN (per cent, real)

	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
EBA EGW labour	2.1	0.1	0.5	1.1	1.5	1.4
Contract labour	2.1	0.1	0.5	1.1	1.5	1.4
Aluminium	-4.9	30.0	16.2	6.6	2.5	-2.4
Steel	-27.7	34.6	20.9	5.1	1.0	-1.0
Polyethylene	0.0	0.0	0.0	0.0	0.0	0.0
Concrete	0.0	0.0	0.0	0.0	0.0	0.0

Amendment 9.2: amend the access arrangement information and access arrangement proposal to delete the section titled ‘Carbon scheme’ on page 83.

Amendment 9.3: amend the access arrangement information to apply the escalation rates given in amendment 9.1 to the operating expenditure categories in the following proportions:

1076 Jemena, *Access arrangement information*, August 2009, p. 36 (confidential).

1077 Jemena, *Access arrangement information*, August 2009, p. 36 (confidential).

1078 Jemena, *Access arrangement information*, August 2009, pp. 36–37 (confidential).

1079 Jemena, *Access arrangement information*, August 2009, p. 39 (confidential).

Table 9.12: Application of real cost escalators to operating expenditure categories (%)

	EBA labour	Contract labour	Concrete	Other non-labour
JAM operating expenditure				
Direct JAM costs	63.7	33.8	2.5	0.0
Other direct JAM costs	63.7	33.8	2.5	0.0
Site remediation	0.0	0.0	0.0	0.0
Indirect JAM costs	0.0	0.0	0.0	0.0
JGN ESF costs (via JAM)	0.0	100.0	0.0	0.0
IT	0.0	100.0	0.0	0.0
Jemena operating expenditure				
Direct JGN costs	0.0	100.0	0.0	0.0
Commercial group costs	0.0	100.0	0.0	0.0
JGN ESF costs direct to JGN	0.0	100.0	0.0	0.0

Amendment 9.4: amend the access arrangement information to delete Tables 6-1, 6-6 and 6-12 and replace them with the following:

Table 9.13: Jemena's forecast operating expenditure (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15	Total
Controllable costs						
Operating and maintenance (including items transferred from proposed capex)	72.5	74.8	76.8	77.9	78.5	380.5
Administration and overheads	21.8	21.9	22.1	22.4	22.7	111.0
Marketing	6.5	6.5	6.5	6.5	6.5	32.5
Sub total	100.8	103.1	105.4	106.8	107.8	523.9
Non-controllable costs						
Government levies	3.1	3.1	3.1	3.1	3.1	15.5
Unaccounted for gas	13.1	13.2	13.3	13.5	13.7	66.6
Carbon costs	0.0	0.0	0.0	0.0	0.0	0.0
Self insurance costs	0.0	0.0	0.0	0.0	0.0	0.0
Debt raising costs	1.3	1.3	1.3	1.3	1.3	6.4
Sub total	17.4	17.5	17.7	17.8	18.0	88.5
Total operating expenditure	118.2	120.7	123.1	124.7	125.8	612.5

Note: Jemena categorises its forecast operating expenditure into the major categories of operating and maintenance and non-operating and maintenance costs. The AER has classified Jemena's forecast operating expenditure into the major categories of controllable and non-controllable costs.

Amendment 9.5: amend the access arrangement proposal to delete section 1.2 *Emissions measurement and permit costs* of schedule 8.

Amendment 9.6: amend the access arrangement information to delete section 6.6.1 *Site remediation works (Confidential)*.

Amendment 9.7: amend the access arrangement proposal to include a new section:

Statement of costs

For each 12 month period ending on 30 June during the Access Arrangement Period, Jemena must maintain records for:

- (a) Operating & Maintenance Opex—any costs paid by Jemena to Jemena Asset Management Pty Ltd (JAM) in relation to services provided under their asset management agreement (or any other replacement asset management services agreement); and

(b) Non Operating & Maintenance Opex—any costs directly incurred by Jemena in relation to providing pipeline services and not included in operating and maintenance opex. For example, without limitation, administration & overheads, government levies, marketing, unaccounted for gas, carbon costs, and insurance.

An indicative breakdown of these fees and costs and the information to be maintained for each item is set out in Schedule 10. Jemena must provide this information for the fees and costs to the Relevant Regulator as part of its proposed revisions to this Access Arrangement under clause 1.6 of the Access Arrangement.

Further, for each 12 month period ending on 30 June during the Access Arrangement Period, Jemena must also maintain:

(a) Details of JAM’s efficiency targets for the period as set out in the Asset Management Plan;

(b) Details of actual costs achieved against budgets set at the commencement of the relevant period;

(c) Details of any JAM cost overruns that were authorised by Jemena during the period as being efficient, including the amount of the overrun and an explanation as to why it was authorised;

(d) Details of JAM’s performance in regards to the risk & benefit sharing mechanism (RBSM) during the period, including service level performance against the pre determined threshold; and

(e) The basis upon which the performance margin for JAM was calculated and applied for the period.

Jemena must provide this information to the Relevant Regulator as part of its proposed revisions to this Access Arrangement under clause 1.6 of the Access Arrangement.

Amendment 9.8: amend the access arrangement proposal to include a new schedule 10, which will set out the information contained in Appendix D of the draft decision.

10 Total revenue

This chapter sets out the AER's estimation of annual revenue requirements for Jemena for the provision of pipeline services for each year of the access arrangement period. This chapter also sets out the X factors applied to Jemena's reference tariffs as part of the estimation of the CPI adjustment.

10.1 Regulatory requirements

Rule 72(1)(m) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the total revenue to be derived from pipeline services for each regulatory year of the access arrangement period.

Rule 76 of the NGR provides that total revenue is to be determined for each regulatory year of the access arrangement period using the building block approach in which the building blocks are:

- a return on the projected capital base for the year
- depreciation on the projected capital base for the year
- if applicable—the estimated cost of corporate income taxation for the year
- increments or decrements for the year resulting from the operation of an incentive mechanism to encourage gains in efficiency
- a forecast of operating expenditure for the year.

10.2 Jemena's proposal

Jemena's proposed total revenue requirement for each year of the access arrangement period and X factors are set out in Table 10.1.

Table 10.1: Jemena's proposed annual revenue requirements and X factors (\$m, real, 2009–10, unless otherwise stated)

	2010–11	2011–12	2012–13	2013–14	2014–15
Total revenue building blocks					
Return on capital	302.2	311.4	319.5	327.7	336.7
Depreciation	30.5	37.0	42.3	48.2	57.4
Operating and maintenance	134.1	138.4	149.2	154.0	159.4
Corporate income taxation	na	na	na	na	na
Incentive mechanism payments	na	na	na	na	na
Total	466.8	486.9	511.0	529.9	553.5
X factor tariff revenue^a					
Haulage reference service (%)	-34.3 ^b	-1.96	-1.96	-1.96	-1.96
Ancillary fees (%)	0.0	0.0	0.0	0.0	0.0
Meter data service (%)	-49 ^b	0.0	0.0	0.0	0.0

Source: Jemena, *Access arrangement information*, August 2009, pp. 164, 201 and AER Public Forum, *Jemena presentation*, 23 September 2009, p. 23.

na: Not applicable.

a: Negative values for X indicate real price increases under the CPI-X formula.

b: X factor is P0.

10.3 AER's analysis and considerations

The total revenue building blocks proposed by Jemena are addressed in the AER's analysis and considerations in Part A of the draft decision.

10.3.1 Jemena's proposed P0 adjustment and X factors

The P0 adjustment indicates the increase in the total revenue requirement in the first year of the access arrangement period, while the X factors indicate subsequent movements in tariffs. P0 is the first year adjustment from the previous access arrangement period and X factors are the smoothing adjustment to subsequent years required to maintain the present value of revenues.

10.3.2 Total revenue, P0 adjustment and X factors

The AER has estimated Jemena's total revenue, P0 adjustment and X factors based on its analysis and consideration of the building block components discussed in the chapters in Part A of the draft decision. These estimations are summarised in Table 10.2.

The AER's draft decision results in a total revenue requirement over the access arrangement period of \$2043.1 million (\$2009–10), compared to \$2548 million (\$2009–10) proposed by Jemena. The main reasons for this difference reflect:

- the AER not approving Jemena's opening capital base and significantly reducing Jemena's forecast capital expenditure
- the AER not approving Jemena's operating expenditure
- the AER not approving Jemena's proposed WACC.

Table 10.2: AER's conclusion on Jemena's annual revenue requirements and X factors (\$m, real, 2009–10)

	2010–11	2011–12	2012–13	2013–14	2014–15
Return on capital	231.6	233.5	234.9	236.3	237.5
Depreciation	29.9	35.5	40.6	44.4	50.4
Operating and maintenance	118.2	120.7	123.1	124.7	125.8
Corporate income taxation	10.3	10.8	11.1	11.6	12.4
Incentive mechanism payments	na	na	na	na	na
Total	390.0	400.4	409.7	417.0	426.1
X factor tariff revenue^a					
Haulage reference service (%)	-1.23 ^b	-1.96	-1.96	-1.96	-1.96
Ancillary fees (%)	0.0	0.0	0.0	0.0	0.0
Meter data service (%)	-42.49	0.0	0.0	0.0	0.0
Smoothed revenue path	378.8	394.2	410.0	425.1	439.0

Source: Table 10.2 is based on information from Part A of the draft decision.

a: Negative values for X indicate real price increases under the CPI-X formula.

b: X factor is P0 for the volume haulage reference service.

The proposed X factor indicates an increase in volume haulage reference service tariffs of 1.23 per cent in the first year of the access arrangement period and a real increase of 1.96 per cent each year of the access arrangement period.

10.4 Conclusion

The AER does not propose to approve the total revenue for each regulatory year of the access arrangement period proposed by Jemena as these do not comply with r. 76 of the NGR and requires Jemena to make the amendment set out below.

10.5 Amendment required to the access arrangement proposal

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 10.1: amend the access arrangement information to delete Table 12.1 and replace it with the following:

Table 10.3: Forecast total revenue requirements for the access arrangement (\$m, real, 2009–10, unless otherwise stated)

	2010–11	2011–12	2012–13	2013–14	2014–15
Return on capital	231.6	233.5	234.9	236.3	237.5
Depreciation	29.9	35.5	40.6	44.4	50.4
Operating and maintenance	118.2	120.7	123.1	124.7	125.8
Corporate income taxation	10.3	10.8	11.1	11.6	12.4
Incentive mechanism payments	na	na	na	na	na
Total	390.0	400.4	409.7	417.0	426.1
X factor tariff revenue (%)^a					
Haulage reference service (%)	-1.23 ^b	-1.96	-1.96	-1.96	-1.96
Ancillary fees (%)	0.0	0.0	0.0	0.0	0.0
Meter data service (%)	-42.49	0.0	0.0	0.0	0.0

a: Negative values for X indicate real price increases under the CPI-X formula.

b: X factor is P0 for the volume haulage reference service.

Part B – Tariffs

11 Demand Forecasts

11.1 Introduction

This chapter examines Jemena's demand forecasts and the AER's analysis and considerations as to whether they reflect a reasonable estimate of growth in demand over the access arrangement period. Accurate and reasonable demand forecasts are important because they are required to establish the reference tariffs and they underpin forecast capital and operating expenditures.

If demand forecasts are overstated, reference tariffs will be set too low to recover total revenue over the access arrangement period. In addition, the forecasts for capital and operating expenditure will likely be overstated because the service provider will plan for higher usage and growth on the network, as well as for the earlier replacement of assets assuming higher usage rates. On the other hand, the converse may be true if demand forecasts are understated.

11.2 Regulatory requirements

Rules 72(1)(a)(iii) and 72(1)(d) of the NGR provide that the access arrangement information for a full access arrangement proposal must include:

- usage of the pipeline over the earlier access arrangement period showing, for a distribution pipeline, minimum, maximum and average demand, and customer numbers in total and by tariff class
- to the extent that it is practicable to forecast pipeline capacity and utilisation of pipeline capacity over the access arrangement period, a forecast of pipeline capacity and utilisation of pipeline capacity over that period and the basis on which the forecast has been derived.

Rule 74(1) of the NGR provides that any information in the nature of a forecast or estimate must be supported by a statement of the basis of the forecast or estimate. Rule 74(2) of the NGR provides that a forecast or estimate must be arrived at on a reasonable basis and represent the best forecast or estimate possible in the circumstances.

11.3 Jemena's proposal

Jemena uses demand forecasts prepared by the National Institute of Economic and Industry Research (the NIEIR report).¹⁰⁸⁰ On the basis of these forecasts, Jemena submits forecasts for volume customers (low volume residential and business customers) and for the demand customers (which are high volume industrial and commercial customers).¹⁰⁸¹

Jemena submits that in developing demand forecasts, it appointed the NIEIR to consider market trends affecting the installation of existing gas appliances,

1080 Jemena, *Access arrangement information*, August 2009, appendix 5.2.

1081 The NIEIR report refers to tariff and contract customers which Jemena generally refers to as 'volume customers' and 'demand customers' respectively.

government energy efficiency policies, implementation of the government's Carbon Pollution Reduction Scheme (CPRS), national hot water strategic framework, national renewable energy target (RET) scheme and any other factors which were considered relevant.¹⁰⁸²

Jemena further submits that the NIEIR report forecasts:

- volume customer usage to grow by only 0.9 per cent per annum between 2009 to 2019 without taking into account Jemena's marketing program¹⁰⁸³
- demand customer usage to decline by an average of 0.4 per cent per year.¹⁰⁸⁴

Jemena submits that this level of growth in demand is attributed in the NIEIR report to the price and market effects of the CPRS, New South Wales (NSW) energy policies, the increasing use of new more efficient gas appliances and the general economic downturn.¹⁰⁸⁵

Jemena adjusts the forecasts in the NIEIR report for the access arrangement period to account for:

- an expected annual increase in volume customer load of 150 terajoules (TJ) cumulatively resulting from Jemena's gas marketing plan¹⁰⁸⁶
- the addition of a new demand customer because this customer was added to the network after the NIEIR forecasts were developed.¹⁰⁸⁷

Table 11.1 shows Jemena's actual and forecast annual demand and customer numbers.

In the earlier access arrangement period, Jemena's actual and estimated gas loads and customer numbers were lower than the forecasts approved by the IPART.¹⁰⁸⁸ Jemena submits the lower than forecast residential load is due to lower than forecast new connections, competition from alternative energy applications (particularly reverse cycle air conditioning, solar/heat-pump hot water systems), and improved levels of energy efficiency for residential gas appliances.¹⁰⁸⁹

Jemena states that customer numbers and total gas load are expected to increase on average by 3.2 and 0.4 per cent per annum respectively over the access arrangement period. Jemena forecasts gas load for volume customers to increase on average by

1082 Jemena, *Access arrangement information*, August 2009, p. 57.

1083 Jemena, *Access arrangement information*, August 2009, p. 60.

1084 Jemena, *Access arrangement information*, August 2009, p. 60.

1085 Jemena, *Access arrangement information*, August 2009, p. xviii.

1086 The NIEIR report forecasts were adjusted by 150 TJ in 2009–2010, 300 TJ in 2010–2011 etc, up to 900 TJ in 2014–15. Jemena, *Access arrangement information*, August 2009, p. 67.

1087 Jemena, *Access arrangement information*, August 2009, p. 68.

1088 Jemena, *Access arrangement information*, August 2009, p. 42.

1089 Jemena, *Access arrangement information*, August 2009, p. 44.

1.8 per cent per annum (after taking into account the effect of Jemena's marketing campaign).¹⁰⁹⁰

Subsequent to submitting its access arrangement proposal Jemena submits additional data regarding actual load and customer numbers for 2008–09 and revised demand customer load forecasts for 2009–10. The revised forecasts show only a slight change in demand for volume customers, but a significant increase for demand customers from 60 690 TJ to 64 262 TJ in 2009–10.¹⁰⁹¹ While Jemena revises upwards its forecasts for 2009–10, the last year of the earlier access arrangement, it makes no revisions to the original forecasts for the access arrangement period

As shown in Table 11.2, while Jemena submits average, minimum and maximum daily demand figures for the first four years of the earlier access arrangement period, it does not provide for minimum and maximum daily demand of the total system.¹⁰⁹² Jemena submits actual and forecast average daily demand for the earlier access arrangement period and the access arrangement period.¹⁰⁹³

Jemena submits its actual and forecast demand for booked maximum daily quantities. The maximum daily quantity (MDQ) for demand customers is forecast to decrease from 327.9 TJ in 2010–11 to 326.0 TJ in 2014–15, representing an annual average reduction of 0.1 per cent over the access arrangement period.¹⁰⁹⁴ This is outlined in Table 11.3 below.

Table 11.4 provides information on new network connections for residential, small business and demand customers. The trend for residential and small business new network connections is growth at an average annual rate of 3.7 per cent and 8.9 per cent respectively over the access arrangement period, whereas the growth of demand customers is flat over this period.¹⁰⁹⁵

Jemena has not submitted forecasts of pipeline capacity and utilisation.

1090 Jemena, *Access arrangement information*, August 2009, p. 54.

1091 Jemena, Response to AER 8 December 2009 questions, 13 January 2010, p. 5.

1092 Jemena, *Access arrangement information*, August 2009, p. 43.

1093 Jemena, *Access arrangement information*, August 2009, pp. 43, 56.

1094 Jemena, *Access arrangement information*, August 2009, p. 54.

1095 Jemena, *Access arrangement information*, August 2009, p. 69.

Table 11.1: Total annual actual and forecast load and customer numbers (units as stated)

	2005–06 ^a	2006–07 ^a	2007–08 ^a	2008–09 ^a	2009–10 ^b	2010–11 ^b	2011–12 ^b	2012–13 ^b	2013–14 ^b	2014–15 ^b
Volume Customers (no.)	974 550	996 336	1 025 943	1 052 610	1 081 041	1 107 756	1 146 749	1 187 836	1 223 755	1 255 664
Volume load (TJ)	31 800	32 492	33 537	34 987	32 721	32 435	32 480	33 187	34 010	34 769
Demand Customers (no.)	483	444	430	414	423	424	424	424	425	426
Demand load (TJ)	62 988	64 857	65 452	65 618	64 262	63 590	64 149	62 570	62 829	62 933
Total load	94 788	97 349	98 989	100 605	96 983	96 025	96 629	95 757	96 838	97 702

Source: Jemena, *Access arrangement information*, August 2009, pp. 42–43, 69, Jemena, Response to AER questions, 20 October 2009, p. 2 and Jemena, Response to AER 8 December 2009 questions, 13 January 2010 p. 6

a: Actual.

b: Forecast.

no. Numbers.

Note: The forecast for 2009–10 is a combination of actual data for the six months to 31 December 2009 and a forecast for the remaining six months.

Table 11.2: Forecast average, maximum and minimum daily demand (TJ)

	2005–06 ^a	2006–07 ^a	2007–08 ^a	2008–09 ^a	2009–10 ^b	2010–11 ^b	2011–12 ^b	2012–13 ^b	2013–14 ^b	2014–15
Minimum	130.2	149.4	132.8	131.7	c	c	c	c	c	c
Maximum	391.2	399.2	415.8	411.8	c	c	c	c	c	c
Average	259.7	266.7	271.2	275.6	255.3	263.1	264.7	262.3	265.3	267.7

Source: Jemena, *Access arrangement information*, August 2009, pp. 43, 56 and Jemena, Response to AER questions, 20 October 2009, p. 2.

a: Actual

b: Forecast

c: Jemena does not provide forecasts of maximum and minimum total system wide demand.

Table 11.3: Demand MDQ (TJ)

	2005–06 ^a	2006–07 ^a	2007–08 ^a	2008–09 ^a	2009–10 ^b	2010–11 ^b	2011–12 ^b	2012–13 ^b	2013–14 ^b	2014–15 ^b
System total	292.5	295.1	293.3	330.0	316.4	327.9	330.7	325.0	325.9	326.0

Source: Jemena, *Access arrangement information*, August 2009, pp. 43, 70 and Jemena, Response to AER questions, 20 October 2009, p. 2 and Jemena, Response to AER 8 December 2009 questions, 13 January 2010 p. 6.

Note: Demand customer MDQ for 2005-06 to 2007-08 is booked MDQ. Remaining years are NIEIR MDQ forecast adjusted for a large new customer.¹⁰⁹⁶

a: Actual.

b: Forecast.

Table 11.4: Forecast network connections

	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Total new residential	22083	26495	33227	38786	40678	35302	31342
Small business	881	975	1075	1175	1251	1335	1410
Demand business	3	3	3	3	3	3	3

Source: Jemena, *Access arrangement information*, August 2009, p. 69.

¹⁰⁹⁶ Jemena, *Access arrangement information*, August 2009, p. 43.

11.4 Consultant's report

The AER engaged ACIL Tasman (ACIL) to assess the reasonableness of Jemena's demand forecasts and assess the actual demand compared with the forecasts in the earlier access arrangement period.

ACIL undertook a desktop review of the methodology and the assumptions used by Jemena and its consultants NIEIR.

Earlier access arrangement period

For the earlier access arrangement period the ACIL Tasman demand forecast report (ACIL report) notes that:

market growth has not been as strong as forecast by the IPART in 2005. The ACIL report notes that a number of factors may have contributed to the shortfall in actual versus forecast demand in this sector including the lower than forecast customer numbers, decreasing gas demand per customer and temperature effects, with milder winters resulting in lower demand.¹⁰⁹⁷

Access arrangement period

For the access arrangement period the ACIL report concludes that:

- the NIEIR's use of key indicators is appropriate for the purpose of developing demand forecasts¹⁰⁹⁸
- the NIEIR's use of normalised heating degree days (HDD), marketing campaign, government policy and general economic conditions are a reasonable basis on which to develop gas demand forecast.¹⁰⁹⁹

Volume customers

The ACIL report notes that it is reasonable to expect that average consumption per volume customer will continue to decline, as is evident in the historical trends.¹¹⁰⁰

The ACIL report submits the actual gas consumption per customer has trended upward at an average rate of around 0.07 GJ per annum over the period 2005–09.¹¹⁰¹ If the trend is maintained over the next access arrangement, then the average gas use per customer would be between 2.7 and 5.4 GJ per annum higher than forecast by Jemena.¹¹⁰²

1097 ACIL Tasman, *Review of demand forecasts for Jemena for the access arrangement period commencing 1 July 2010*, 2 February 2010, p. 21 (ACIL, *Demand forecast report*, 2 February 2010).

1098 ACIL, *Demand forecast report*, 2 February 2010, p. 18.

1099 ACIL, *Demand forecast report*, 2 February 2010, pp. 19–21.

1100 ACIL, *Demand forecast report*, 2 February 2010, p. 31.

1101 ACIL, *Demand forecast report*, 2 February 2010, p. 28.

1102 ACIL, *Demand forecast report*, 2 February 2010, p. 28.

The ACIL report notes that Jemena forecasts are on average between 8 and 16 per cent below the historical trend¹¹⁰³ and there is no evidence to support the step change in average customer consumption that is implicit in the volume customer forecasts proposed by Jemena.¹¹⁰⁴

The ACIL report notes that the 2008–09 year was a significantly colder year than average with HDD of 602 compared to an average HDD of 512 for the five years ended June 2009. The ACIL report outlines that the methodology adopted to derive the 2009–10 forecast is likely to understate consumption in 2009–10.

The ACIL report adopts a methodology that yields higher forecasts for volume customer demand forecast than those proposed by Jemena. The ACIL report forecasts volume customer demand per customer by extrapolating data (normalised for weather) for the five years 2004–05 to 2008–2009 on a linear trend.

As a consequence, the ACIL report recommends that the volume customer demand forecast should be adjusted upward to reflect an average rate of consumption per customer, and provides an alternative forecast for customer gas quantities.¹¹⁰⁵

Demand customers

The ACIL report notes a sharp decline in forecast gas consumption in the demand sector of around 4.4 PJ per annum or 6.8 per cent for 2009–10.¹¹⁰⁶ The ACIL report also notes that the forecast in this year effectively sets the starting point for the access arrangement period, and considers it important to further investigate the reasons why the NIEIR report modelling produces this result when actual demand data for NSW for 2008–09 does not show any steep decline.¹¹⁰⁷

The ACIL report submits that the NIEIR report considers a relatively pessimistic scenario for the economy and that certain measures¹¹⁰⁸ appear to have mitigated the impact of the global financial crisis (GFC) in Australia.¹¹⁰⁹ As a result, the ACIL report considers that the Australian economy is likely to recover more quickly than assumed in the NIEIR report.

The ACIL report notes these underlying assumptions have likely overstated the reduction in gas for 2009–10,¹¹¹⁰ as supported by data on recent actual gas consumption.

In light of the above observations, the ACIL report recommends an alternative (higher) forecast for demand customers. The approach is similar to that which the

1103 ACIL, *Demand forecast report*, 2 February 2010, p. 28.

1104 ACIL, *Demand forecast report*, 2 February 2010, p. 31.

1105 ACIL, *Demand forecast report*, 2 February 2010, p. 32.

1106 ACIL, *Demand forecast report*, 2 February 2010, p. 33.

1107 ACIL, *Demand forecast report*, 2 February 2010, p. 33.

1108 ACIL, *Demand forecast report*, 2 February 2010, p. 18.

1109 ACIL, *Demand forecast report*, 2 February 2010, p. 18.

1110 ACIL, *Demand forecast report*, 2 February 2010, p. 20.

ACIL report adopts for volume customers. That is, the ACIL report forecasts demand by extrapolating data for the five years 2004–05 to 2008–2009 on a linear trend.

The ACIL report notes that while the higher demand forecasts will affect MDQ, the change in MDQ is not necessarily proportional to the change in demand forecasts.

11.5 Submissions

The AER received submissions from the Energy Markets Reform Forum (EMRF), Energy Users' Association of Australia (EUAA), AGL Energy (AGL) and EnergyAustralia concerning Jemena's demand forecasts.

11.5.1 Energy Market Reform Forum

The EMRF submits that distribution businesses have an incentive to understate growth in consumption or to front-end load the forecast growth over the period.¹¹¹¹

The EMRF notes that using the first method will allow the service provider to use the lower figure in the denominator of the calculation of tariffs and overstate the amount of funds raised on a unit basis.¹¹¹² The second method allows the recovery of cash earlier and therefore provides a greater net present value of the cash flow to the business.¹¹¹³

The EMRF also submits that it does not have its own forecasts for growth over the coming regulatory period. However, EMRF members have noted some growth due to national and internal economic growth.¹¹¹⁴

The EMRF further submits that there is an incentive to overstate new connections to justify forecast capital expenditure.¹¹¹⁵

Volume customers

The EMRF submits that volume customers appear to be reducing the amount of gas used per site per annum over time.¹¹¹⁶ The EMRF also submits that this reduction is not as steep as Jemena observes. The EMRF notes actual data confirms there is a consistent trend of a small reduction in usage per site over time of about 0.5 per cent per year. However, Jemena indicates that the trend would be three times this rate.¹¹¹⁷ EMRF considers this step change is not credible.¹¹¹⁸

Demand customers

The EMRF observes that demand customers are very large customers which consume about two thirds of the total gas transported on the Jemena network and have unique

1111 EMRF, *NSW Gas Distribution Revenue Reset, Jemena Application: A response by the Energy Markets Reform Forum*, 9 November 2009, p. 58. (EMRF, *Submission to the AER*, 9 November 2009).

1112 EMRF, *Submission to the AER*, 9 November 2009, p. 58.

1113 EMRF, *Submission to the AER*, 9 November 2009, p. 58.

1114 EMRF, *Submission to the AER*, 9 November 2009, p. 59.

1115 EMRF, *Submission to the AER*, 9 November 2009, p. 58.

1116 EMRF, *Submission to the AER*, 9 November 2009, p. 61.

1117 EMRF, *Submission to the AER*, 9 November 2009, p. 61.

1118 EMRF, *Submission to the AER*, 9 November 2009, p. 61.

tariffs.¹¹¹⁹ The EMRF notes that Jemena's forecasts show a significant reduction in gas forecast to be transported in 2009–10 which are used as the basis for the forecasts for the access arrangement period.¹¹²⁰ The EMRF notes that the forecast consumption for 2008–09 does not show this trend.

The EMRF notes that forecasts for the current period were significantly overstated in the IPART decision in 2005 which Jemena submits led to less than expected revenue.¹¹²¹ The EMRF submits that it is not convinced that this is the case. The EMRF states that demand customers pay for transport on the basis of MDQ and not annual consumption.¹¹²²

11.5.2 Energy Users' Association of Australia

The EUAA submits that while Jemena has highlighted the difficulty of the recovering revenues in the price controlled regime, it is the responsibility of the service provider to manage such risks through appropriate forecasting as they have the best information to do so.¹¹²³

11.5.3 AGL

Volume customers

AGL submits that the volume market demand forecast is characterised by a projected growth in customer numbers, but offset by a significant decline in gas usage per customer, which AGL considers reasonable.¹¹²⁴ AGL does not consider that Jemena provides much evidence to support this decline in gas usage per customer.¹¹²⁵ AGL raises the following issues:

- AGL queries how the NIEIR report has calculated the load per customer for existing and new customers supplied by Jemena¹¹²⁶
- AGL queries whether factors driving higher usage were included, such as increases in dwelling sizes and increased penetration of central and space heating.¹¹²⁷ AGL also notes Australian Bureau of Statistics (ABS) figures that show a stronger increase in the number of dwellings using gas for water heating from 20.8 per cent in 1999 to 25.5 per cent in 2008.¹¹²⁸

1119 EMRF, *Submission to the AER*, 9 November 2009, p. 59.

1120 EMRF, *Submission to the AER*, 9 November 2009, p. 60.

1121 EMRF, *Submission to the AER*, 9 November 2009, p. 60.

1122 EMRF, *Submission to the AER*, 9 November 2009, p. 60.

1123 EUAA, *Submission to the AER on Jemena Gas Networks' Access Arrangement proposal 2010/11–2014/15*, 10 November 2009, p. 18 (EUAA, *Submission to the AER*, 10 November 2009).

1124 AGL, *Submission: JGN Access Arrangement 2010–2015*, 10 November 2009, p. 5 (AGL, *Submission to the AER*, 10 November 2009).

1125 AGL, *Submission to the AER*, 10 November 2009, p. 6.

1126 AGL, *Submission to the AER*, 10 November 2009, p. 6.

1127 AGL, *Submission to the AER*, 10 November 2009, p. 6.

1128 AGL, *Submission to the AER*, 10 November 2009, p. 6.

AGL queries the assumptions used in the NIEIR report and in particular the weather normalisation calculations. AGL submits calculations on weather normalisations of 560 HDD average for 2003–2008 based on Bureau of Meteorology (BoM) data for Sydney compared to the NIEIR report standard HDD of 489.¹¹²⁹

Demand customers

AGL does not have any major issues in relation to the forecast for demand customers.¹¹³⁰

AGL queries whether demand for the existing gas-powered generation (GPG) has been factored into the projections.¹¹³¹ AGL notes the GPG represents a new avenue for gas consumption within the network and submits that this should partially offset the flat trend forecast for large manufacturing sites.¹¹³² AGL submits that volumes associated with GPG should be included in the demand forecasts.¹¹³³

11.5.4 EnergyAustralia

EnergyAustralia submits that the NIEIR report has taken an overly pessimistic view of the economic future and the report should be updated in light of more recent information.¹¹³⁴

EnergyAustralia submits it agrees with the approach to forecasting load in the volume sector.¹¹³⁵ However, EnergyAustralia submits that the information presented in the tables in the NIEIR report is confusing, as it is neither clear whether the information is being presented on a calendar year or financial year basis, nor whether the customer numbers are average customer numbers or point in time customer numbers.¹¹³⁶ EnergyAustralia further submits that the reduction in average usage for existing customers does not reconcile with the information provided in section 4 of the NIEIR report.¹¹³⁷

11.6 AER's analysis and considerations

11.6.1 Demand in the earlier access arrangement period

The AER notes EMRF's submission that, because demand customers are charged on the basis of MDQ and not consumption, it is not convinced that Jemena would have received less revenue than expected in the earlier access arrangement period as a result of lower than expected demand.¹¹³⁸

1129 AGL, *Submission to the AER*, 10 November 2009, p. 7.

1130 AGL, *Submission to the AER*, 10 November 2009, p. 5.

1131 AGL, *Submission to the AER*, 10 November 2009, p. 5.

1132 AGL, *Submission to the AER*, 10 November 2009, p. 5.

1133 AGL, *Submission to the AER*, 10 November 2009, p. 5.

1134 EnergyAustralia, *Submission on Jemena Gas Networks' Access Arrangement Proposal 2010 to 2015*, 10 November 2009, p. 25 (EnergyAustralia, *Submission to the AER*, 10 November 2009).

1135 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 25.

1136 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 25.

1137 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 25.

1138 EMRF, *Submission to the AER*, 9 November 2009, p. 60.

The AER notes Jemena's submission that it receives most of its revenue from volume customers. Volume customer load is below the IPART final decision by 18 PJ, or 10 per cent, over the earlier access arrangement period, which results in a shortfall of revenue of about 8 per cent.¹¹³⁹

11.6.2 Demand forecasts in the access arrangement period

Jemena proposes lower forecast average annual growth in demand for the access arrangement period at 0.4 per cent¹¹⁴⁰ compared with 2.0 per cent¹¹⁴¹ for the earlier access arrangement period.

The AER requested further information regarding actual load and customer numbers for 2008–09 and revised demand customer load forecasts for 2009–10.¹¹⁴² Figure 11.1 compares load forecasts and actual demand in the earlier access arrangement with the access arrangement period, originally submitted by Jemena in its access arrangement proposal and the revised forecast for 2009–10, and demonstrates:

- the earlier access arrangement period forecasts in aggregate approved by the IPART were on average 3.0 per cent higher than actual load over the earlier access arrangement period
- demand grew constantly in the earlier access arrangement, and is forecast to remain relatively flat from 2010–11 to 2012–13 with growth returning from 2012–13 for the remainder of the access arrangement period.¹¹⁴³

1139 Jemena, *Access arrangement information*, August 2009, p. 45.

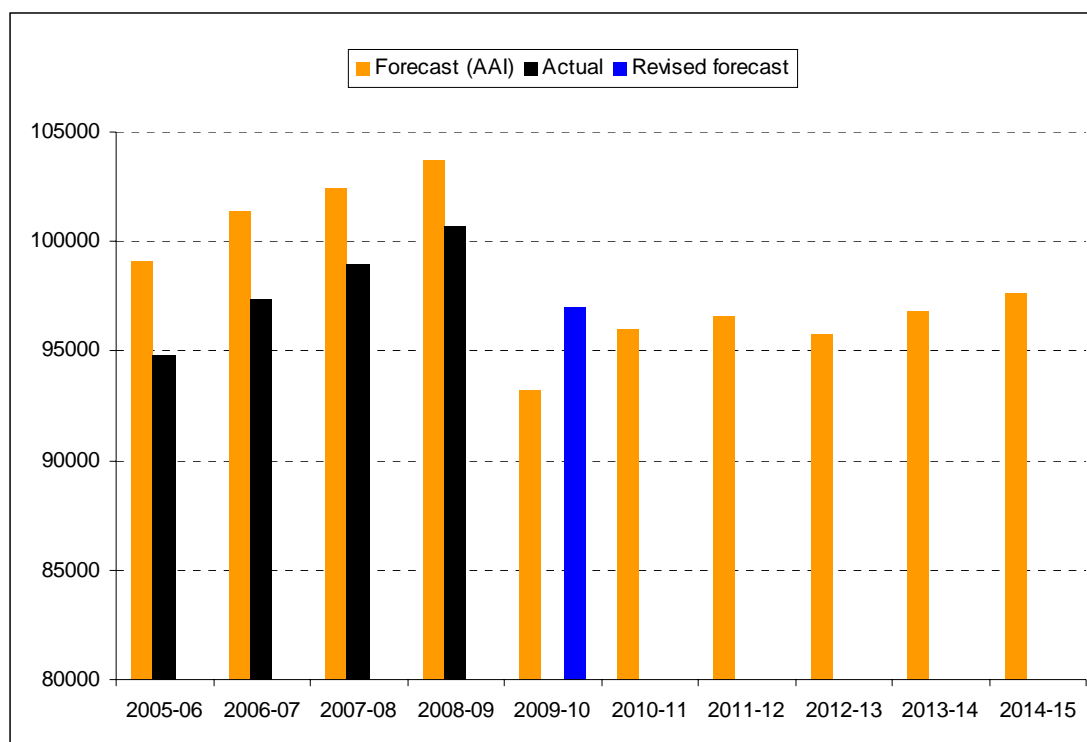
1140 Jemena, *Access arrangement information*, August 2009, p. 54.

1141 ACIL, *Demand forecast report*, 2 February 2010, p. 5.

1142 Jemena, Response to AER 08 December 2009 questions, 13 January 2010 p. 6.

1143 Jemena, *Access arrangement information*, August 2009, pp. 43, 69.

Figure 11.1: Actual and forecast annual demand volumes (TJ)



Source: Jemena, *Access arrangement information*, August 2009, pp. 44, 69.

Note: 2009–10 actual values are estimated values.

11.6.2.1 Volume and demand customer load forecasts

Volume customers

The AER notes Jemena’s proposal and the ACIL report and agrees that average consumption per customer is likely to fall over the access arrangement period. Reasons for the expected decline include government policies and public opinion that support improved energy efficiency, reduced hot water consumption and increased use of renewable sources such as solar electric.¹¹⁴⁴

The AER considers, however, that Jemena has not provided sufficient justification for the steepness of its proposed rate of decline in the average consumption per customer from the last year of the earlier access arrangement period to the first year of the access arrangement period and subsequently over the access arrangement period. As a result the AER considers that Jemena’s forecast demand for volume customers over the access arrangement period is understated. Therefore its demand forecasts for volume customers are not arrived at a reasonable basis to provide a best estimate or forecast, that reflects improvements in general economic conditions.¹¹⁴⁵

The forecast demand for volume customers proposed by Jemena and the demand approved by the AER, which is based on the methodology outlined in the ACIL report, are shown in Table 11 5. Given the above considerations, the AER does not

1144 ACIL, *Demand forecast report*, 2 February 2010, p. 31.

1145 NGR r. 74 (2).

approve the volume customer forecasts proposed by Jemena and requires Jemena to amend its volume forecasts as outlined in amendment 11.1.

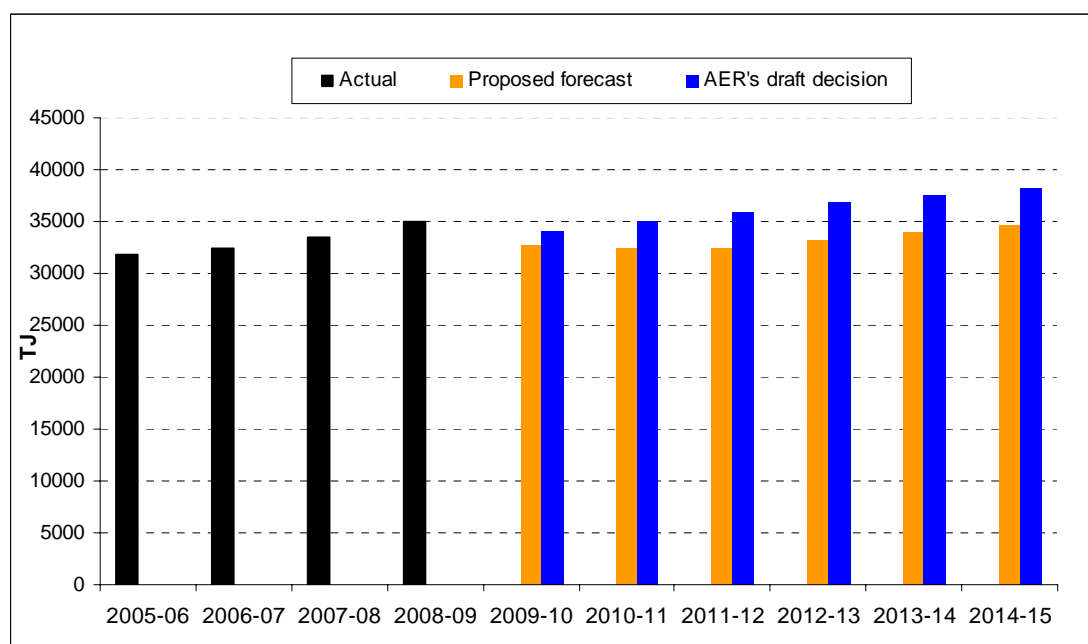
Table 11.5: Demand forecasts for volume customers (units as stated)

	Jemena's proposal (TJ)	AER draft decision (TJ)	Difference (%)
2010–11	32 435	34 967	7.0
2011–12	32 480	35 864	10.4
2012–13	33 187	36 804	10.9
2013–14	34 010	37 561	10.4
2014–15	34 769	38 175	9.8

Source: Jemena, *Access arrangement information*, August 2009, p. 69 and ACIL, *Demand forecast report*, 2 February 2010, p. 32.

Figure 11.2 compares the actual and forecast demand for volume customers submitted by Jemena and the values determined by the AER in the draft decision.

Figure 11.2: Demand forecasts for volume customers



Source: Jemena, *Access arrangement information*, August 2009, p. 69 and ACIL, *Demand forecast report*, 2 February 2010, p. 3.

Weather adjustment

AGL submits a 560 HDD average for 2003–08 based on BoM data for Sydney compared to the 489 as calculated in the NIEIR report. The ACIL report notes that both figures are correct.

The ACIL report submits that the differences stem primarily from the use of data from different weather stations and the use of different time periods.¹¹⁴⁶ The ACIL report further submits that the choice of weather station in the Sydney region does not materially affect the results of the weather normalisation process.¹¹⁴⁷

Demand customers

The AER sought further information from Jemena to explain the forecast decline in demand for 2009–10, particularly in relation to demand customers.¹¹⁴⁸ Jemena submitted that the large projected decline in gas consumption by demand customers in 2009–10 was explained by a forecast decline in gas consumption by the industrial sector (the non-commercial part of the contract market).¹¹⁴⁹ The NIEIR report also notes that at the time of forecasting, between March and April 2009, certain industries were expected to be hit disproportionately hard by the world economic recession.¹¹⁵⁰

The ACIL report notes NIEIR's economic outlook for Australia and NSW.¹¹⁵¹ In December 2008, the ultimate effects of the GFC in Australia were uncertain and NIEIR considered a relatively pessimistic scenario.¹¹⁵²

The ACIL report also notes that in light of the performance of the Australian economy, during the first half of the 2009 and the apparent efficacy of the government stimulus measures, the macroeconomic indicators for NSW may well prove more favorable than assumed in the NIEIR report.¹¹⁵³

The updated data provided by Jemena on actual gas consumption shows that the demand customer consumption for the six months ended 31 December 2009 was 32 813 PJ and Jemena now expects the demand customer load for 2009–10 to reach 64 262 PJ compared to 60 690 PJ originally submitted by Jemena in its access arrangement proposal.¹¹⁵⁴ The new data shows actual consumption for demand customer load in 2009–10 will be in the order of 3.6 PJ higher than the estimate provided in the NIEIR report.¹¹⁵⁵

The ACIL report provides further evidence from analysis conducted using the National Gas Market Bulletin Board. The ACIL report confirms that total gas delivery for customers serviced via the Jemena network was 101.5 PJ in the year to end November 2009 compared with 97.5 PJ based on Jemena's proposal.¹¹⁵⁶

1146 ACIL, *Demand forecast report*, 2 February 2010, p. 24.

1147 ACIL, *Demand forecast report*, 2 February 2010, p. 25.

1148 NIEIR, Letter from NIEIR to Jemena, 20 October 2009.

1149 NIEIR, Letter from NIEIR to Jemena, 20 October 2009.

1150 NIEIR, Letter from NIEIR to Jemena, 20 October 2009.

1151 ACIL, *Demand forecast report*, 2 February 2010, p. 18.

1152 ACIL, *Demand forecast report*, 2 February 2010, p. 18.

1153 ACIL, *Demand forecast report*, 2 February 2010, p. 18.

1154 ACIL, *Demand forecast report*, 2 February 2010, p. 36.

1155 ACIL, *Demand forecast report*, 2 February 2010, p. 36.

1156 ACIL, *Demand forecast report*, 2 February 2010, p. 35.

The ACIL notes that the sharp drop in demand customer load for 2009–10 forecast in the NIEIR report is not evident from an analysis of bulletin board data and from the actual consumption data provided by Jemena.¹¹⁵⁷

Given the updated information provided by Jemena for 2009–10 and the findings of the ACIL report, the AER considers that Jemena’s proposed forecasts for demand users for the access arrangement period are understated and therefore do not reflect forecasts arrived at on a reasonable basis that represent the best estimate possible in the circumstances. The forecast demand for demand customers approved by the AER, which is based on the methodology outlined in the ACIL Tasman report and with Jemena’s demand customer forecasts are shown in Table 11.6. Given the above considerations, the AER does not approve the demand customer forecasts proposed by Jemena and requires Jemena to amend its volume forecasts as outlined in amendment 11.1.¹¹⁵⁸

Table 11.6: Demand forecasts for demand customers (units as stated)

	Jemena's proposal (TJ)	AER draft decision (TJ)	Difference (%)
2010–11	63 590	65 870	3.6
2011–12	64 149	66 330	3.4
2012–13	62 570	66 791	6.7
2013–14	62 829	67 252	7.0
2014–15	62 933	67 713	7.6

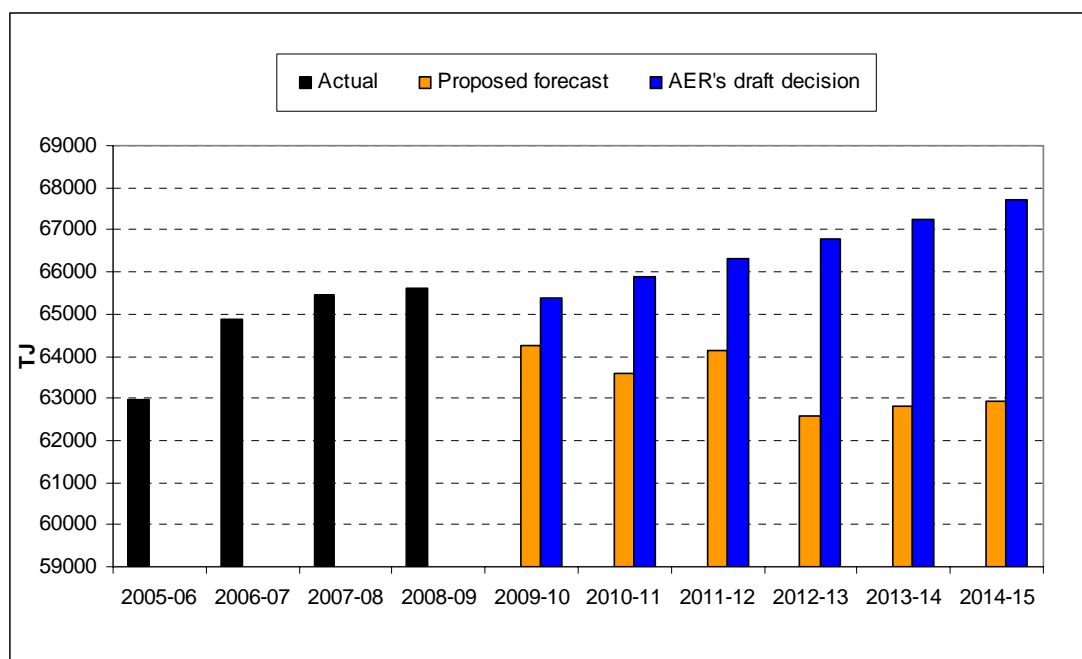
Source: Jemena, *Access arrangement information*, August 2009, p. 69 and ACIL, *Demand forecast report*, 2 February 2010, p. 37.

Figure 11.3 compares the actual and forecast demand for demand customers submitted by Jemena and the values determined by the AER in the draft decision.

1157 ACIL, *Demand forecast report*, 2 February 2010, pp. 35–36, 39.

1158 NGR, r. 74 (2).

Figure 11.3: Demand forecasts for demand customers



Source: Jemena, *Access arrangement information*, August 2009, p. 69 and ACIL, *Demand forecast report*, 2 February 2010, p. 37.

Demand first response

The ACIL report notes that Jemena is proposing to introduce a new 'first response' service for large demand customers. Jemena is forecasting for the next access arrangement period that 43 per cent of demand customer volume will move to the new first response service.¹¹⁵⁹ This is discussed in further detail in chapter 12 of the draft decision.

The ACIL report submits that it is not clear how this service will operate relative to other arrangements already in place for dealing with emergency outages or other circumstances that may require load shedding.¹¹⁶⁰ The ACIL report notes that Jemena be required to provide a clear justification for the level of discount offered and the assumptions regarding rate of uptake amongst eligible customer if the large differential impact of tariffs faced by some customers and the potential for windfall gains if the forecast levels of uptake of the first response service are not achieved.¹¹⁶¹

The AER requires Jemena to make changes to the first response demand assumptions as set out in amendment 12.3 of chapter 12 of the draft decision.

Other issues

The EMRF submits that Jemena has an incentive to front-end load demand forecasts.¹¹⁶² The AER notes that this does not appear to be the case as shown in

1159 Jemena, Response to AER 17 December 2009 questions, 8 January 2010, p. 3.

1160 ACIL, *Demand forecast report*, 2 February 2010, p. 37.

1161 ACIL, *Demand forecast report*, 2 February 2010, p. 37.

1162 EMRF, *Submission to the AER*, 9 November 2009, p. 58.

Figure 11.1, which illustrates that annual demand for the access arrangement period is forecast to increase over access arrangement period. There is a slight decline in 2012–13 after which demand is forecast to increase again.

The AER acknowledges the concerns raised by the EMRF that service providers have incentives to understate demand.¹¹⁶³

Gas-powered generation

The AER notes AGL's submission that demand associated with GPG has not been factored into the projections.¹¹⁶⁴ While the NIEIR report excludes GPG¹¹⁶⁵ the AER confirms the adjustments made by Jemena to the NIEIR forecasts include GPG.¹¹⁶⁶

11.6.2.2 Conclusion

In light of the additional information provided by Jemena and the findings in the ACIL report, the AER considers that the demand forecasts for volume and demand customers submitted by Jemena are not arrived at on a reasonable basis and do not represent the best forecast possible in the circumstance in compliance with r. 74(2) of the NGR.

11.6.2.3 Conclusion

The AER does not propose to approve the demand forecasts proposed by Jemena as it does not comply with r. 74(2) of the NGR. The AER requires Jemena to make amendment 11.1 set out below.

11.6.3 Minimum, maximum and average demand

Jemena provides data for the minimum, maximum and average daily demand from the earlier access arrangement period for the years 2005–08¹¹⁶⁷ (refer to Table 11.2). The trend for average daily demand is flat and maximum daily demand is reasonably stable.

Average demand for the access arrangement period is forecast to increase by 7.8 TJ in 2010–11 following a decrease in 2009–10. Average daily demand forecasts for the access arrangement period decreases slightly in 2012–13 and then continues to grow for the remainder of the period. The forecast of average daily demand for the access arrangement period is lower than the earlier access arrangement period.

11.6.4 Customer numbers and demand by tariff class

Average annual customer growth for the earlier access arrangement period is 2 per cent, compared to the slower forecast growth of 0.4 per cent per annum forecast for the access arrangement period. Volume customers comprise around 35 per cent of the total load while 65 per cent is attributable to demand customers.¹¹⁶⁸

1163 EMRF, *Submission to the AER*, 9 November 2009, p. 58.

1164 AGL, *Submission to the AER*, 10 November 2009, p. 5.

1165 Jemena, *Access arrangement information*, August, 2009, appendix 5.2, pp. 49, 51, 53.

1166 Jemena, *Access arrangement information*, August 2009, p. 69.

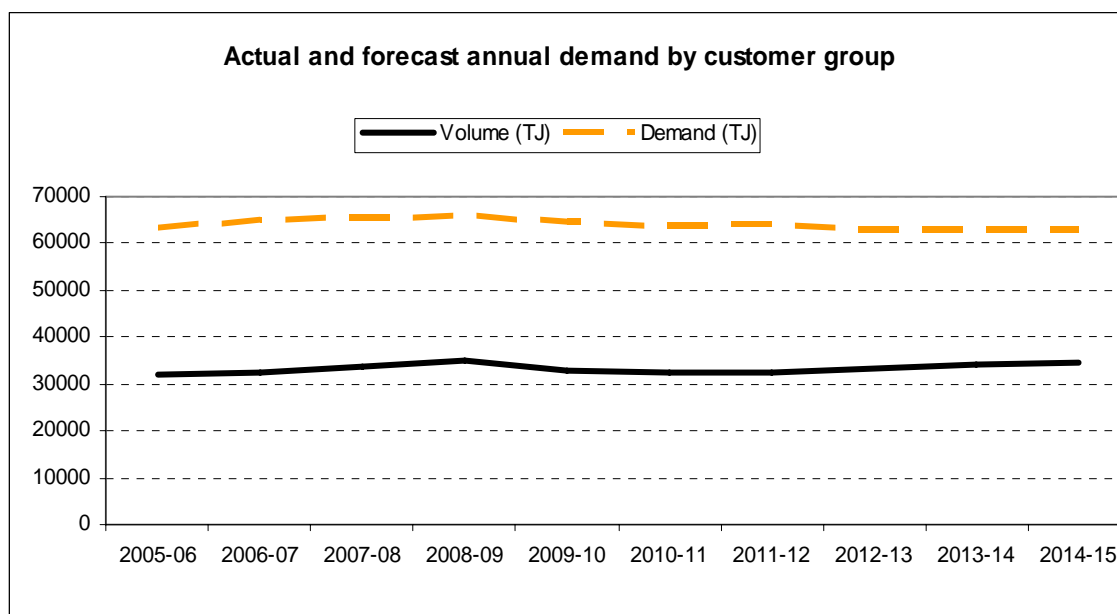
1167 Jemena, *Access arrangement information*, August 2009, p. 43.

1168 Jemena, *Access arrangement information*, August 2009, p. 67.

Figure 11.2 shows average annual consumption by customer group, volume customers (GJ), and demand customers (TJ), and demonstrates that:

- volume customers consumed on average 33.1 GJ per annum over the earlier access arrangement period. This is forecast to reduce by 4.9 GJ over the access arrangement period to 28.2 GJ
- demand customers on average consumed 145.6 TJ over the earlier access arrangement period and this is forecast to increase to 148.9 TJ over the access arrangement period.

Figure 11.4: Actual and forecast annual demand by customer group



Source: Jemena, *Access arrangement information*, August 2009, pp. 43, 69 and Jemena, Response to AER questions, 13 January 2010, p 5.

Based on the information provided by Jemena,¹¹⁶⁹ the forecast average annual growth in new customer connections over the access arrangement period is 4.6 per cent. This annual growth rate is significantly higher than the forecast annual average demand growth of 0.8 per cent implicit in the demand forecasts approved by the AER. A high growth rate in new connections is consistent with a relatively low annual average growth in demand if the assumption of decreasing average demand per customer is reasonable.

The AER acknowledges the concerns of the EMRF,¹¹⁷⁰ AGL¹¹⁷¹ and EnergyAustralia¹¹⁷² regarding the forecast decline in average demand per customer. AGL in particular queries many of the key underlying assumptions of the NIEIR

1169 Jemena, *Access arrangement information*, August 2009, p. 69.

1170 EMRF, *Submission to the AER*, 9 November 2009, p. 61.

1171 AGL, *Submission to the AER*, 10 November 2009, p. 6.

1172 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 25.

report.¹¹⁷³ The AER does not agree with the rate of decline in average consumption per customer proposed by Jemena and agrees with the methodology proposed by ACIL. Table 11.7 shows the AER's resulting average consumption per customer (adjusted for weather) compared with Jemena's proposal over the access arrangement period.

Table 11.7: Comparison of average consumption per customer (units as stated)

	Jemena's proposal (GJ)	AER draft decision (GJ)	Difference (%)
2010–11	29.3	31.3	6.8
2011–12	28.3	31.0	9.4
2012–13	27.9	30.7	9.9
2013–14	27.8	30.4	9.4
2015–14	27.7	30.1	8.7

Source: Jemena, *Access arrangement information*, August 2009, p. 65; ACIL, *Demand forecast report*, 2 February 2010, p. 29; AER analysis.

11.6.5 Forecast pipeline capacity and utilisation

The AER notes that Jemena provides no information on capacity and utilisation. The AER acknowledges that a distribution network is a meshed network made up of interconnected pipes and there are a number of practical considerations governing why the calculation of utilisation is not straightforward, and so therefore may not be practicable.

11.7 Conclusion

The AER does not propose to approve the demand forecasts proposed by Jemena as they do not comply with r. 74(2) of the NGR and requires Jemena to make the amendment below.

11.8 Amendments required to the access arrangement proposal

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 11.1: amend the access arrangement information to delete Table 5-11 and replace it with the following:

¹¹⁷³ AGL, *Submission to the AER*, 10 November 2009, p. 7.

June years	2008–09	2009–10	2010–11	2011–12	2012–13	2013–14	2014–15
Total load (TJ)							
Residential	23 041	21 381	22 073	22 650	23 354	23 809	24 146
Business	11 946	12 850	12 894	13 214	13 450	13 752	14 029
Total volume customers	34 987	34 231	34 967	35 864	36 804	37 561	38 175
Demand Customers	65 618	65 409	65 870	66 330	66 791	67 252	67 713
Total load	100 605	99 640	100 837	102 194	103 595	104 813	105 888
Customer numbers							
Residential	1 021 412	1 049 749	1 076 880	1 115 666	1 156 343	1 191 645	1 222 988
Business	31 198	30 869	30 876	31 083	31 492	32 110	32 677
Total volume customers	1 052 610	1 080 618	1 107 756	1 146 749	1 187 836	1 223 755	1 255 664
Demand customers	414	423	424	424	424	425	426
New network connections							
New estates and high rise	17 095	21 280	26 954	31 565	33 655	28 495	24 768
Electricity to gas	4988	5215	6273	7220	7022	6807	6575
Total new residential	22 083	26 495	33 227	38 786	40 678	35 302	31 342
Small business	881	975	1075	1175	1251	1335	1410
Demand customers	3	3	3	3	3	3	3
HDD index standard							
HDD index	486	483	480	477	474	471	468
Average							

residential load per year (GJ)							
Existing customers	22.3	21.1	20.9	20.6	20.4	20.2	20.0
New estates and high rise	20.3	19.7	19.9	20.0	19.8	19.4	19.1
Electricity to gas	15.7	15.2	15.5	15.7	15.7	15.6	15.6
Average load all residential	22.3	20.6	20.4	20.1	20.0	19.7	19.4
Maximum daily quantity demand customers (MDQ)							
MDQ demand customers	334.2	317.5	327.9	330.7	325.0	325.9	326.0

12 Tariffs—distribution pipelines

12.1 Introduction

This chapter sets out the AER’s consideration of Jemena’s tariff proposal against the distribution pricing requirements in the NGR.

12.2 Regulatory requirements

Rule 48(1)(d)(i) of the NGR provides that a full access arrangement must specify for each reference service the reference tariff.

Rule 72(1)(j) of the NGR provides that the access arrangement information for a full access arrangement must include the proposed approach to the setting of tariffs including:

- (i) the suggested basis of reference tariffs, including the method used to allocate costs and a demonstration of the relationship between costs and tariffs; and
- (ii) a description of any pricing principles employed but not otherwise disclosed under this rule;

Rule 93(1) of the NGR provides that total revenue is to be allocated between reference and other services in the ratio in which costs are allocated between reference and other services. Rule 93(2) of the NGR provides that costs are to be allocated between reference and other services as follows:

- (a) costs directly attributable to reference services are to be allocated to those services; and
- (b) costs directly attributable to pipeline services that are not reference services are to be allocated to those services; and
- (c) other costs are to be allocated between reference and other services on a basis (which must be consistent with the revenue and pricing principles) determined or approved by the AER.

Rule 94(1) of the NGR provides that for the purpose of determining reference tariffs, customers for reference services provided by means of a distribution pipeline must be divided into tariff classes. Rule 94(2) of the NGR provides that a tariff class must be constituted with regard to the need to group customers for reference services together on an economically efficient basis and to avoid unnecessary transaction costs.

Rule 94(3) of the NGR provides that for each tariff class, the revenue expected to be recovered should lie on or between:

- (a) an upper bound representing the stand alone cost of providing the reference service to customers who belong to that class; and
- (b) a lower bound representing the avoidable cost of not providing the reference service to those customers.

Rule 94(4) of the NGR provides that a tariff, and if it consists of two or more charging parameters, each charging parameter for a tariff class:

- (a) must take into account the long run marginal cost for the reference service or, in the case of a charging parameter, for the element of the service to which the charging parameter relates;
- (b) must be determined having regard to:
 - (i) transaction costs associated with the tariff or each charging parameter; and
 - (ii) whether customers belonging to the relevant tariff class are able or likely to respond to price signals.

If the service provider cannot recover the expected revenue it requires under r. 94(4) of the NGR, then r. 94(5) of the NGR provides that the tariffs can be adjusted to ensure recovery of expected revenue with minimum distortion to efficient patterns of consumption.

Rule 96 of the NGR provides that the AER may approve a discount for a particular class of users or prospective users if it is satisfied that:

- (a) the discount is necessary to:
 - (i) respond to competition from other providers of pipeline services or other sources of energy; or
 - (ii) maintain efficient use of the pipeline; and
- (b) the provision of the discount is likely to lead to reference or equivalent tariffs lower than they would otherwise have been.

If the AER approves the discount under r. 96 of the NGR, the AER may also approve allocation of the cost, or part of the cost, of providing the discount to the costs of providing a reference or other service in one or more future access arrangement periods.

12.3 Jemena's proposal

Jemena proposes the following reference services for the access arrangement period:

- haulage service
- meter data service.¹¹⁷⁴

12.3.1 Allocation of total revenue and costs

Jemena submits that costs are allocated such that the revenues for negotiated and ancillary services are deducted from total revenue. The residual costs are then allocated to the haulage reference service and meter data reference service.¹¹⁷⁵

¹¹⁷⁴ Jemena, *Access arrangement information*, August 2009, p. 167.

¹¹⁷⁵ Jemena, *Access arrangement information*, August 2009, p. 175.

Jemena allocates its operating expenditure costs to the haulage reference service and meter data.¹¹⁷⁶ Jemena allocates capital costs based on the share of the regulatory asset base attributable to each reference service.¹¹⁷⁷

12.3.2 Tariffs—distribution pipelines

12.3.2.1 Division of customers into tariff classes

Jemena proposes to divide customers for haulage services into the volume and demand categories based on gas consumed. Volume customers are small customers consuming 10TJ or less per year. Demand or large customers are users that are likely to consume more than 10 TJ per year.¹¹⁷⁸

Jemena proposes two volume tariff classes. The two volume tariff classes consist of one coastal tariff class and one country tariff class.¹¹⁷⁹

Jemena proposes 24 demand tariff classes consisting of one country tariff class, one demand throughput tariff class, 11 coastal tariff classes plus an additional 11 demand first response tariff classes (one for each coastal tariff class).¹¹⁸⁰

In addition to the haulage services there is an additional meter data service. The proposals for these tariff classes are outlined below.

Volume customers

Earlier access arrangement period

In the earlier access arrangement a uniform network charge applied to all volume customers based on the volume of gas consumed.¹¹⁸¹ A separate trunk tariff was charged to volume customers in the coastal areas of the network.¹¹⁸²

Access arrangement period

The volume tariffs have not changed significantly in the access arrangement period. The main difference is that the two customer groups have been categorised into two different tariff classes:

- V–Coastal tariff—applies to small customers that have gas supplied from the trunks in the Wilton section of the network.¹¹⁸³
- V–Country tariff—applies to small customers that are located in country network sections and do not use the trunk mains (i.e. parts of the network outside Sydney, Newcastle and Wollongong).¹¹⁸⁴

1176 Jemena, *Access arrangement information*, August 2009, p. 176.

1177 Jemena, *Access arrangement information*, August 2009, p. 176.

1178 Jemena, *Access arrangement information*, August 2009, p. 182.

1179 Jemena, *Access arrangement information*, August 2009, p. 183.

1180 Jemena, *Access arrangement information*, August 2009, pp. 183–184.

1181 Jemena, *Access arrangement information*, August 2009, p. 182.

1182 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, p. 52.

1183 Jemena, *Access arrangement information*, August 2009, p. 183.

This new classification of volume customers has not in substance changed the nature of charging arrangements. As in the earlier access arrangement period, small users in the coastal area are still charged for use of trunk on top of a local network tariff and country users are just charged a local network tariff.

Demand customers

Earlier access arrangement period

Jemena's tariff structure in the earlier access arrangement was complex and contained a large variety of tariffs. The main reference service was a capacity based tariff and was charged on dollars per GJ of maximum daily quantity (MDQ) per annum. To provide flexibility to users in meeting their gas requirements, the reference service was complemented by a suite of services such as additional services for authorised and unauthorised overruns, and short term services such as the summer tranche service.

The network tariffs within the coastal part of the network discriminated between users in different locations. This meant that users in Wollongong zone 1 for the same level of gas consumed paid lower local network tariffs than Newcastle zone 1 users and Newcastle zone 1 users paid lower tariffs than Sydney zone 1 users.¹¹⁸⁵ Generally, the differential in the network tariffs between these locations has not altered as a consequence of the proposed change in tariff structure.¹¹⁸⁶

In addition to the network charges, there was a separate trunk charge for customers in the coastal part of the network. The trunk charge was for use of the high pressure pipeline (trunk) which provided gas from the Moomba to Sydney and Eastern Gas Pipelines to customers in Sydney, Newcastle and Wollongong. The trunk charge in the earlier access arrangement period took into consideration the user's location within the network by charging the users for the length of the trunk they used and the volumes transported.¹¹⁸⁷ This meant that the trunk charge was based on the users capacity as well as location of the user's off take point on the trunk (i.e. location of the user along the trunk). The trunk tariff was charged so that a user in Wollongong would pay significantly less for gas than a user in Newcastle transporting the same amount of gas, based on the rationale that the user in Wollongong used less of the trunk.

Access arrangement period

Jemena's proposed demand service offering is much more simplified compared to the earlier access arrangement period. A single default reference service applies and this is complemented by some simplified service offerings. The five key elements of Jemena's proposal for demand tariffs are:

1184 Jemena, *Access arrangement information*, August 2009, p. 183.

1185 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, pp. 38–62.

1186 Jemena, *Access arrangement proposal*, August 2009, pp. 50–62.

1187 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, p. 50.

- the complex network tariff structure is replaced by a single haulage service¹¹⁸⁸
- the trunk charge is not separately charged but is combined with the network tariff based on gas used¹¹⁸⁹
- the network tariff is complemented by a first response tariff which provides significant discounts for large users that can load shed under the conditions that Jemena proposes¹¹⁹⁰
- a minimum demand bill charge ensures that a users total distribution bill does not reduce when the user transitions from being a volume customer to a demand customer¹¹⁹¹
- customers who seek to maintain that charging arrangement in the existing contract (a legacy service) are charged a 5 per cent premium.¹¹⁹²

These aspects of Jemena's proposal are outlined below.

Network tariff

As outlined, the default tariff for demand customers is a capacity charge based on the 9th highest maximum demand in any one day over any 12 month period.¹¹⁹³ The network charge is not uniform across the network, but is based on whether the customer is located in Wollongong, Sydney or Newcastle as well as their location in these three areas (zonal tariffs in these area are established with reference to postcode locations and volume of gas consumed).¹¹⁹⁴

Bundling of trunk in network tariff

Jemena outlines that there is no need to maintain a separate trunk charge, because of the introduction of the short term trading market (STTM).¹¹⁹⁵ The STTM will mean that it is no longer possible to identify where gas enters and exits the trunk for a particular user or a particular delivery point.¹¹⁹⁶ Jemena submits that this lends itself to a tariff structure in which a single charge for the trunk based on gas consumed applies for all users within the coastal part of the network.

The trunk charge that is blended into the capacity charge is the same for all demand customers irrespective of the customer's location in the network. In this way, there is one tariff that combines the charge for the network and the trunk. This is called the hub price. The hub price is based on a uniform trunk price combined with a network charge based on the customer's location and the volumes it transports to that location

1188 Jemena, *Access arrangement information*, August 2009, p. 174.

1189 Jemena, *Access arrangement information*, August 2009, appendix 15.1, pp. 7–19 (confidential).

1190 Jemena, *Access arrangement information*, August 2009, p. 185.

1191 Jemena, *Access arrangement information*, August 2009, p. 185.

1192 Jemena, *Access arrangement information*, August 2009, pp. 170–172.

1193 Jemena, *Access arrangement information*, August 2009, p. 183 and Jemena, *Access arrangement proposal*, August 2009, schedule 3, pp. 20, 40.

1194 Jemena, *Access arrangement proposal*, August 2009, pp. 55–56.

1195 Jemena, *Access arrangement information*, August 2009, appendix 15.1, p. 7 (confidential).

1196 Jemena, *Access arrangement information*, August 2009, appendix 15.1, p. 7 (confidential).

within the hub. The trunk charge is established by dividing the 2009–10 demand trunk revenue by the 2009–10 demand gas quantities to provide a block tariff based on tranches of gas consumed. This trunk charge is added to the 2009-10 local network tariffs also based on a block structure. The combined tariff is then subject to an adjustment to reflect the increases in revenue sought by Jemena.¹¹⁹⁷

First response and other offerings

Demand customers may be eligible for two other tariffs subject to meeting certain requirements:

- Capacity first response tariffs—a new discounted tariff for large customers willing to participate in network load shedding on a ‘first response’ basis.¹¹⁹⁸
- Throughput tariffs—assignment to this tariff is currently made on a user request basis. This tariff category replaces the capping and throughput service in the earlier access arrangement and charges demand customers for throughput as opposed to capacity.¹¹⁹⁹

Jemena proposes a first response tariff class for demand customers, which entitles users to a discount of 50 per cent in return for shedding load under an agreed curtailment plan.¹²⁰⁰ Each of the 11 demand coastal tariff classes has a corresponding demand first response tariff class. Except for the 50 per cent discount that applies, the demand first response tariffs are identical in structure to the demand coastal tariff classes. Jemena assumes that all of its largest users with a network chargeable demand of 1800GJ will take-up the demand first response tariff.¹²⁰¹ Jemena also submits in later correspondence that after speaking with leading users, during the preparation of its access arrangement proposal, all these customers indicated interest in the new first response tariff. It was on this basis that Jemena assumes that the vast majority of eligible sites would take-up the first response tariff.¹²⁰²

Minimum bill

Jemena proposes to introduce a minimum bill charge for demand customers to provide a smooth transition in price between volume and demand tariff classes.¹²⁰³ The purpose of the proposed minimum bill is to address incentives inherent in the tariff structure at the 10TJ level that have led to inefficient gas use. In the earlier access arrangement period, there was an incentive for users close to the 10TJ consumption to increase use beyond the efficient levels to move from the relatively higher tariff volume category to the lower tariff demand category. The consequence of this reclassification was that the user's network charges fell substantially as a demand user.¹²⁰⁴

1197 Jemena, *Access arrangement information*, August 2009, appendix 15.1, pp. 7–18 (confidential).

1198 Jemena, *Access arrangement information*, August 2009, pp. 183–184.

1199 Jemena, *Access arrangement information*, August 2009, p. 184.

1200 Jemena, *Access arrangement information*, August 2009, p. 185.

1201 Jemena, *Pricing model*, August 2009 (confidential).

1202 Jemena, Response to AER 17 December 2009 Questions, 8 January 2010, pp. 3–4 (confidential).

1203 Jemena, *Access arrangement information*, August 2009, p. 185.

1204 Jemena, *Access arrangement information*, August 2009, p. 185.

Legacy services

Jemena proposes to maintain the MDQ billing arrangement for demand customers as a legacy services for users who do not transition to the new reference services. The initial charges payable for legacy services at the start of the access arrangement period will be the 30 June 2010 charges, increased by about 40 per cent to effect a premium of 5–6 per cent in addition to the initial increase in tariff.¹²⁰⁵

Meter data services

A meter data service is a service for the provision of meter reading and on-site data and communication equipment to a delivery point. The meter data services are a bundled service provided in conjunction with haulage services.¹²⁰⁶ Basic metering equipment and meter reading charges are charged at different rates for volume and demand customers. Demand customers pay more as they require more sophisticated metering equipment, which allows for daily metering.¹²⁰⁷

12.3.2.2 Other rule requirements

This section outlines other aspects of Jemena's proposal that outline how it meets the requirements of the NGR.

Expected revenue, stand alone cost and avoidable cost

Jemena submits that the proposed tariff classes and tariffs are determined so that the expected revenue to be recovered for each tariff class for each reference service lies on or between stand alone and avoidable cost.¹²⁰⁸ Table 12.1 shows that the expected revenue is between the avoidable cost estimate and the stand alone cost estimate.

1205 Jemena, *Access arrangement proposal*, August 2009, pp. 8–9 and Jemena, *Access arrangement information*, August 2009, pp. 170–172.

1206 Jemena, *Access arrangement information*, August 2009, p. 169.

1207 Jemena, *Access arrangement proposal*, August 2009, p. 60 and Jemena, *Access arrangement information*, August 2009, p. 184.

1208 Jemena, *Access arrangement information*, August 2009, p. 186.

Table 12.1: Stand alone costs compared to expected revenue (\$2009–10, real)

Tariff class	Avoidable estimate	Expected revenue	Stand alone estimate
Haulage: Demand market segment			
DC – 1 (Sydney 1)	326 000	3 839 000	39 209 000
DC – 2 (Sydney 2)	728 000	7 009 000	44 742 000
DC – 3 (Sydney 3)	871 000	10 453 000	47 790 000
DC – 4 (Sydney 4)	360 000	7 047 000	44 772 000
DC – 5 (Sydney 5)	92 000	1 943 000	36 929 000
DC – 6 (Newcastle 1)	243 000	3 108 000	46 610 000
DC – 7 (Newcastle 2)	201 000	2 560 000	51 832 000
DC – 8 (Newcastle 3)	33 000	628 000	33 013 000
DC – 9 (Wollongong 1)	c-i-c	c-i-c	c-i-c
DC – 10 (Wollongong 2)	92 000	767 000	23 852 000
DC – 11 (Wollongong 3)	Not provided	Not provided	Not provided
DC Country	393 000	3 407 000	24 433 000
Haulage: Volume market segment			
Coast	244 571 000	376 508 000	694 180 000
Country	20 174 000	42 300 000	100 978 000
Meter Data Service			
Volume	3 251 000	5 217 000	16 001 000
Demand	906 000	1 022 000	319 948 000

Source: Jemena, *Access arrangement information*, August 2009, appendix 15.3, pp. 5–6.

Stand alone and avoidable costs are not provided for DC-11 (or zone 3 in the Wollongong area) as there are currently no demand customers in that area and therefore the expected revenue over the access arrangement period is zero.¹²⁰⁹

1209 Jemena, *Access arrangement information*, August 2009, appendix 15.3, p. 13.

Charging parameters

A charging parameter is the basis on which tariffs are charged within a tariff class i.e a fixed charge, \$/GJ. There may be more than one charging parameter within a tariff class. The NGR requires that a tariff and each charging parameter must take into consideration long run marginal cost and must be determined having regard to transaction costs that are associated with the tariff or each charging parameter.¹²¹⁰ Further, the tariff and charging parameter must be determined having regard to whether customers belonging to the relevant tariff class are able or likely to respond to price signals.¹²¹¹

Jemena states it has taken into consideration long run marginal costs for the proposed volume tariffs.¹²¹² However, Jemena submits that it has not provided long run marginal costs (LRMC) for demand customers due to the effects of capital contributions on LRMC and because building block revenue is greater than LRMC.¹²¹³

Jemena divides the combined capital and estimated incremental operating costs by the change in demand forecast by NIEIR to obtain a per unit estimate of the long run marginal cost (LRMC) for the volume tariff classes as follows:¹²¹⁴

- from \$27/GJ to \$33/GJ, when total costs is divided by the change in demand¹²¹⁵
- from \$13/GJ to \$30/GJ with an average of \$19/GJ for annual changes in incremental costs and demand.¹²¹⁶

Jemena states that these compare to its proposed volume haulage throughput tariff block 1 price of approximately \$13/GJ.¹²¹⁷

Jemena does not provide any analysis of the LRMC for demand customers.¹²¹⁸

Prudent discounts

Jemena proposes to continue providing prudent discounts during the next access arrangement.¹²¹⁹ For each current prudent discount Jemena provides justification for the discount, and why the discount is necessary to respond to competition or maintain efficient use of the pipeline.¹²²⁰

1210 NGR, r. 94(4)(a).

1211 NGR, r. 94(4)(b).

1212 Jemena, *Access arrangement information*, August 2009, pp. 190–193.

1213 Jemena, *Access arrangement information*, August 2009, p. 191.

1214 Jemena, *Access arrangement information*, August 2009, p. 192.

1215 Jemena, *Access arrangement information*, August 2009, p. 192.

1216 Jemena, *Access arrangement information*, August 2009, p. 192.

1217 Jemena, *Access arrangement information*, August 2009, p. 192.

1218 Jemena, *Access arrangement information*, August 2009, p. 191.

1219 Jemena, *Access arrangement information*, August 2009, section 14.5, p. 193 (confidential).

1220 Jemena, *Access arrangement information*, August 2009, section 14.5, p. 193 (confidential).

12.3.2.3 Other considerations

Jemena notes that, within an access arrangement period, it may apply to the AER to introduce or withdraw a haulage reference tariff or haulage reference tariff components.¹²²¹

12.4 Submissions

12.4.1 Reference tariffs and tariff structure

12.4.1.1 General comments

The Energy Markets Reform Forum (EMRF) submits that the transition to the NGR requires the AER to be more heavily involved in the development of the tariffs and their pricing structure than in previous distribution reviews.¹²²²

Origin notes that as a result of lower than forecast volumes in the earlier access arrangement period, Jemena has under-recovered revenue compared to its approved revenue.¹²²³ Origin notes that the increases in tariffs for small customers is 34.3 per cent plus CPI and the increase in metering charges is 49 per cent plus CPI is significant¹²²⁴ and that increases of over 30 per cent in the first year and an X factor less than 2 per cent does not imply a smooth price path.¹²²⁵ Origin submits it would be helpful if the X factor for each year of the access arrangement period was clearly labelled as well as the P0 increases.¹²²⁶

12.4.1.2 Volume tariffs

AGL Energy (AGL) submits that the new tariff classes should only be created if there are material differences in tariffs. AGL submits that new tariff classes result in significant costs to users initially because customers have to be reassigned to appropriate tariff classes. AGL also submits that the new tariff classes result in additional complexity and increased cost on an ongoing basis.¹²²⁷

AGL submits that the P0 adjustment for volume tariffs is a major step change and should be smoothed over the access arrangement period to avoid significant price shock.¹²²⁸

The Energy Users' Association of Australia (EUAA) submits that customer growth appears to be in the volume customer category and that volume customers should

1221 Jemena, *Access arrangement proposal*, August 2009, pp. 26–28.

1222 EMRF, *NSW Gas Distribution Revenue Reset, Jemena Application: A response by the Energy Markets Reform Forum*, pp. 6–7 (EMRF, *Submission to the AER*, November 2009).

1223 Origin, *RE: Jemena Gas Networks Access Arrangement Proposal*, 10 November 2009, p. 5 (Origin, *Submission to the AER*, 10 November 2009).

1224 Origin, *Submission to the AER*, 10 November 2009, p. 5.

1225 Origin, *Submission to the AER*, 10 November 2009, p. 6.

1226 Origin, *Submission to the AER*, 10 November 2009, p. 6.

1227 AGL, *Submission: JGN access arrangement 2010–2015*, 10 November 2009, p. 3 (AGL, *Submission to the AER*, 10 November 2009).

1228 AGL, *Submission to the AER*, 10 November 2009, pp. 1, 3.

incur the bulk of capital expenditure recovery. The EUAA also submits a single volume customer category may not be sufficient for efficient pricing.¹²²⁹

12.4.1.3 Demand tariffs

EnergyAdvice¹²³⁰ and the EMRF¹²³¹ both submit that the merging of trunk and local network services for demand customers should be cost reflective for customers in all zones of the network. EMRF submits that the costs each user pays must represent their use of the network.¹²³²

CSR Building Products (CSR) submits that changes to the reference tariff structure that remove separate trunk and local network services, reduce cost reflectivity and increase tariffs, which may increase the risk of bypass of the Jemena network.¹²³³ CSR submits that the reallocation of tariffs to some users and not others is not equitable compared with the earlier access arrangement.¹²³⁴ CSR also provides examples which show that its tariffs are proposed to increase on average by 52 per cent (with some sites increasing by more than 60 per cent). This is inconsistent with Jemena's proposal that there would be no material change in total revenue from the demand service.¹²³⁵ CSR would like to know the basis on which the cost reallocation is proposed.¹²³⁶

EnergyAdvice submits that the inclusion of the trunk charge as part of a single network charge combined with the reallocation of the cost base represents an inappropriate basis for determining reference services and Jemena should be required to maintain separate trunk and local network services and tariffs.¹²³⁷ EnergyAdvice¹²³⁸, the EUAA¹²³⁹, Qenos¹²⁴⁰ and CSR¹²⁴¹ submit that demand tariffs vary considerably on a site-by-site basis. EnergyAdvice provides examples in a confidential attachment of the differential impact of the new tariff structure on users in different parts of the network compared with the earlier access arrangement period.

1229 EUAA, *Submission to the AER on Jemena's gas networks' access arrangement proposal 2010/11–2014/15*, 10 November 2009, section 5.4 (EUAA, *Submission to the AER*, 10 November 2009).

1230 EnergyAdvice, *Joint submission to AER on the Jemena gas networks (NSW) revised access arrangement – August 2009*, 10 November 2009, p. 10 (EnergyAdvice, *Submission to the AER*, 10 November 2009).

1231 EMRF, *Submission to the AER*, November 2009, pp. 14–15, 67–68.

1232 EMRF, *Submission to the AER*, November 2009, p. 66.

1233 CSR, *Jemena Gas Networks (NSW) – Revised Access Arrangement – August 2009*, 10 November 2009, p. 2 (CSR, *Submission to the AER*, 10 November 2009).

1234 CSR, *Submission to the AER*, 10 November 2009, p. 2.

1235 Jemena, *Presentation to the AER public forum*, 23 September 2009.

1236 CSR, *Submission to the AER*, 10 November 2009, p. 1.

1237 EnergyAdvice, *Submission to the AER*, 10 November 2009, pp. 8–10.

1238 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 7.

1239 EUAA, *Submission to the AER*, 10 November 2009, sections 5.3, 5.4.

1240 Qenos, *Submissions on Jemena Access Arrangement Proposal 2010–2015*, 11 November 2009, pp. 1–2 (Qenos, *Submission to the AER*, 11 November 2009).

1241 CSR, *Submission to the AER*, 10 November 2009, p. 1.

This analysis shows that Newcastle customers will pay substantially less per GJ of gas than Sydney customers under the proposed new structure.¹²⁴²

The EMRF notes Jemena's proposal that tariffs may vary individually, but the overall revenue recovery from the tariffs for the largest gas users will be much the same in real terms to tariffs under the earlier access arrangement, but that reasons for this need to be fully explained and justified.¹²⁴³ Queensland Hunter Gas Pipeline (QHGP) submits that rates should be more reflective of the actual cost of system use, otherwise it will bypass Jemena's network to supply Newcastle customers.¹²⁴⁴

First response tariff

AGL would like to know how the discounted capacity first response tariff will be funded and asks a number of questions regarding the practical implementation of the tariff.¹²⁴⁵

EnergyAdvice and the EMRF support the new tariff.¹²⁴⁶ However, EnergyAdvice submits that the AER needs to be satisfied that Jemena has used reasonable assumptions so the revenue outcome is not distorted.¹²⁴⁷ Qenos submits that it may be difficult for customers to meet the eligibility criteria for the first response tariff.¹²⁴⁸

Minimum bill charge

EnergyAdvice and EnergyAustralia submit that they do not support the proposed minimum bill charge.¹²⁴⁹ EnergyAdvice questions Jemena's logic for applying the minimum demand bill charge.¹²⁵⁰ It submits that customers should not be subject to a minimum charge for retaining a connection after paying for connection, meter and capacity charges.¹²⁵¹ EUAA submits that the proposed minimum bill requirements should be scrutinised to determine if they are efficient and fair; and they do not lead to cost increases for existing demand customers.¹²⁵²

1242 EnergyAdvice, *Submission on the site tariff outcomes under proposed Jemena Gas Network (NSW) revised access arrangement*, 5 January 2010 (EnergyAdvice, *Submission to the AER*, 5 January 2010) (confidential).

1243 EMRF, *Submission to the AER*, November 2009, p. 68.

1244 Queensland Hunter Gas Pipeline, *Jemena gas network (NSW) – revised access arrangement – August 2009*, 10 November 2009, p. 4.

1245 AGL, *Submission to the AER*, 10 November 2009, p. 8.

1246 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 7 and EMRF, *Submission to the AER*, November 2009, p. 68.

1247 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 7.

1248 Qenos, *Submission to the AER*, 11 November 2009, p. 2.

1249 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 17 and EnergyAustralia Retail, *Jemena Gas Networks (NSW) Ltd's proposed 2010–2015 access arrangement & reference services agreement*, November 2009, pp. 4, 22 (EnergyAustralia, *Submission to the AER*, November 2009).

1250 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 17.

1251 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 17.

1252 EUAA, *Submission to the AER*, 10 November 2009, section 5.4.

Legacy services

AGL and Origin submit that the basis for the 40 per cent escalation in rates for legacy services is not provided.¹²⁵³ Origin questions the need for such a high increase as an incentive to move customers onto the new services. It outlines that there may be other means such as the use of sunset clauses in existing contracts to move customers to the new services and avoid the need for punitive tariffs.¹²⁵⁴

12.4.1.4 Meter service

EnergyAdvice would like to know the basis for the 49 per cent increase to the meter reading charge and the provision of on-site data and communications equipment charge.¹²⁵⁵

12.4.2 Other matters

AGL submits that the proposed reference tariff policy should be amended to specify when an existing reference tariff may be varied or withdrawn, a new reference tariff must be approved by the AER and to provide users with prior notice if an existing tariff is varied or withdrawn.¹²⁵⁶

12.5 Round table discussion on tariffs

The AER held a round table discussion on Jemena's proposed tariffs¹²⁵⁷ and tariff structure on 11 December 2009 (Round table discussion on tariffs). At the Round table discussion on tariffs Jemena clarified its proposal and discussed issues raised in the submissions. Following the Round table discussion on tariffs Jemena submitted an independent expert report that provided further information about the STTM and its relevance to the proposed tariff structure. The information provided was a consultant report supporting Jemena's application to the National Competition Council for the reclassification of its Wilton to Wollongong (Southern trunk) and Wilton to Newcastle (Northern trunk) from transmission to distribution pipelines.¹²⁵⁸

12.6 AER's analysis and considerations

12.6.1 Allocation of building block revenue to reference services

Jemena is required to allocate the total costs of the pipeline between reference services and other services.¹²⁵⁹ The AER has reviewed the allocation of total revenue in which Jemena has subtracted non reference revenues and has allocated the

1253 AGL, *Submission to the AER*, 10 November 2009, p. 9 and Origin Energy Retail Ltd, *Re: Jemena gas networks access arrangement proposal*, 10 November 2009, p. 1 (Origin, *Submission to the AER*, 10 November 2009).

1254 Origin, *Submission to the AER*, 10 November 2009, p. 1.

1255 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 8.

1256 AGL, *Submission to the AER*, 10 November 2009, pp. 3–4.

1257 Further information on the round table discussion can be found on the AER's website: <<http://www.aer.gov.au/content/index.phtml?itemId=733157>>.

1258 Jemena, *Clarification following the round-table discussion of Jemena's access arrangement proposal (2010–2015) tariffs and tariff structures, 22 December Submission: JGN access arrangement 2010–2015*, 22 December 2009.

1259 NGR, r. 93.

remaining revenue to haulage reference services and meter data services. Based on the information provided, the AER considers Jemena's cost allocation methodology is consistent with r. 93 of the NGR.

12.6.2 Volume tariffs

Jemena is proposing to separate country and coastal users and charge a separate tariff for each.¹²⁶⁰ This is not inconsistent with the approach approved by the IPART in the earlier access arrangement period.¹²⁶¹ The reason for the categorisation is to differentiate the tariffs that should apply to users in the coastal part of the network from the tariffs in the country. This classification ensures that the coastal tariffs include an additional amount for use of the trunk by these customers. Despite submission from the EUAA that a single volume tariff class is not sufficient for efficient pricing¹²⁶², Jemena's proposal is not that different from its existing structure.

The AER considers that the volume tariff classes are constituted consistent with the need to group customers for reference services together on an economically efficient basis and to avoid unnecessary transaction costs.¹²⁶³

The NGR requires that the expected revenue required to be recovered for a particular tariff class is between efficient stand alone and avoidable costs.¹²⁶⁴ This may not mean that a tariff is set at the cost of service, as the NGR recognises that there is a range of efficient costs. As required under the NGR, the AER considers that the analysis provided by Jemena does demonstrate that the expected revenue for coastal and country tariff classes is between stand alone and avoidable costs as defined by Jemena. The AER has not considered the appropriateness of the definition of stand alone and avoidable costs as proposed by Jemena. This is because the AER has not been provided with information to support the definition of stand alone and avoidable costs used by Jemena and has not been able to verify the estimation of these costs against those definitions. In the absence of this information however, the AER considers that these range of efficient costs under the NGR is large, and considers that the information provided by Jemena is sufficient to satisfy the requirements of the NGR.¹²⁶⁵

Further the NGR recognises that the building block costs are comprised of sunk costs, therefore, the NGR requires that long run marginal costs are also taken into account when determining tariffs. This may mean that the proposed charging parameters for volume users may not take into account the long run marginal costs for the volume services as required under the NGR.¹²⁶⁶ However, the AER has not been provided with sufficient information about the definition and estimation of the long run marginal costs for volume tariffs, even so the information provided by Jemena and the

1260 Jemena, *Access arrangement information*, August 2009, p. 183.

1261 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, pp. 24–28, 51–52.

1262 EUAA, *Submission to the AER*, 10 November 2009, 10 November 2009, section 5.4.

1263 NGR, r. 94(2).

1264 NGR, r. 94(3).

1265 NGR, r. 94(3).

1266 NGR, r. 94(4)(a).

fact that charging parameters for volume customers has not changed significantly from the earlier access arrangement period, the AER considers Jemena's proposal is consistent with the NGR.¹²⁶⁷

Other issues

The AER notes AGL's submission about higher administration costs and transitional issues¹²⁶⁸ due to the change in the volume tariff structure, however, the AER considers that the reclassification of the tariff classes and the change in charging parameters is not inconsistent with the rules.¹²⁶⁹ Further, the proposed tariff classes and charging parameters do not in substance change the underlying tariff structure that existed in the earlier access arrangement period.

Origin also raises a matter in relation to the increase in volume tariffs.¹²⁷⁰ This matter is considered in section 12.6.6.

12.6.2.1 Conclusion

Notwithstanding that in the absence of information, the AER considers the proposed tariff structure for volume customers is in substance similar to what was approved by the IPART in the earlier access arrangement period. For the reasons outlined above, the AER considers that Jemena's proposed tariff classes for volume consistent with the requirements of r. 94 of the NGR.

12.6.3 Demand tariffs

As outlined coastal demand tariffs are significantly different from the earlier access arrangement period.¹²⁷¹ Jemena has proposed to combine the trunk and network charge, this will still mean differential pricing within the hub, but this is driven by the customer's location in the network and the volumes of gas it uses, not the trunk charge.¹²⁷² This streamlined structure does not change the network zone structure but has significantly reduced unnecessary transactions costs from the complex contract or demand tariff structure in the earlier access arrangement.

The AER considers that the demand tariff classes are constituted consistent with the need to group customers for reference services together on an economically efficient basis and avoid unnecessary transaction costs.¹²⁷³

1267 NGR r. 94(4).

1268 AGL, *Submission to the AER*, 10 November 2009, p. 3.

1269 NGR, r. 94.

1270 Origin, *Submission to the AER*, 10 November 2009, p. 5.

1271 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, pp. 38–62.

1272 Jemena, *Access arrangement proposal*, August, 2009, pp. 50–62 and Jemena, *Access arrangement information*, August 2009, appendix 15.1, pp. 7–19 (confidential).

1273 NGR, r. 94(1) and r. 94(2).

12.6.3.1 Proposed network tariffs

Coastal demand tariffs

The AER has received submissions from large energy users¹²⁷⁴ outlining that, based on site specific volumes, demand network tariffs have changed substantially from the earlier access arrangement period. In some cases, these users outline that tariffs may increase by as much as 69 per cent, while others may decrease by as much as 42 per cent. Some submissions question the reason for the large increase in tariffs.¹²⁷⁵

CSR outlines concerns about the cost allocation within the demand tariff class leading to differential tariffs across tariff classes.¹²⁷⁶

Jemena proposes a significant increase in its total revenue requirement which largely accounts for the proposed increase in tariffs of 34.3 per cent.¹²⁷⁷ In relation to submissions which question the overall increase in tariffs, much of the increase is explained by this factor. The AER has not accepted the total revenue increase as outlined in total revenue chapter 10 and has made adjustments. Further, as outlined in the demand chapter 11 certain adjustments are made to demand that also impact tariffs.

The AER has reviewed the analysis and information provided by users, and confirms that in some locations, users are proposed to have significant increases in tariff above adjustments to support the increase in required total revenue. In examining Jemena's proposal the AER has discerned that one of the reasons for these increases is the combined impact of a flat trunk charge and a location based network charge. However, the AER notes that others factor leading to differential tariffs between demand customers relate to other aspects of Jemena's proposal such as the introduction of the minimum demand bill charge and the assumptions made about the take-up of the first response tariff. These matters are considered below.

Country demand tariffs

Besides the initial increase in tariffs to account for the change in Jemena's revenue requirement, the country demand tariffs have remained effectively the same from the earlier access arrangement. This structure was approved by the IPART in the earlier access arrangement and Jemena has provided information that this existing tariff structure is consistent with the NGR.¹²⁷⁸ Notwithstanding the lack of information about aspects of its proposal such as the verification of stand alone and avoidable cost as outlined above, the AER considers that the country demand tariffs are consistent with the NGR.¹²⁷⁹

1274 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 7, 13, 15–16, EUAA, *Submission to the AER*, 10 November 2009, sections 5.3, 5.4, Qenos, *Submission to the AER*, 11 November 2009, pp. 1–2 and CSR, *Submission to the AER*, 10 November 2009, p. 1, EnergyAdvice, *Submission to the AER*, 5 January 2010 (confidential).

1275 CSR, *Submission to the AER*, 10 November 2009, p. 1, EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 8 and QHGP, *Submission to the AER*, 10 November 2009, p. 4.

1276 CSR, *Submission to the AER*, 10 November 2009, p. 1.

1277 Jemena, *Access arrangement information*, August 2009, p. 164.

1278 Jemena, *Access arrangement information*, August 2009, p. 183.

1279 NGR, r. 94.

12.6.3.2 Impact of the change in allocation of the trunk charge

The change in how the trunk charge is allocated to demand users accounts for the largest change in network tariffs above and below the P0 adjustment for coastal demand users. All Country demand customer tariffs increase by the P0 adjustment.

Jemena's allocation of the trunk costs is based on a customer level of chargeable demand.¹²⁸⁰ Previously both capacity and customers location on the trunk determined the trunk charge.¹²⁸¹ This means that trunk costs no longer depend on location of the customer. The AER notes that even though different network charges existed in the earlier access arrangement period based on location in the network, its impact across different locations was somewhat tempered by the differential trunk tariffs that also applied.¹²⁸²

EnergyAdvice submits that the AER should require Jemena to maintain separate trunk charges and local network services and tariffs.¹²⁸³ Users at the Round table discussion on tariffs questioned whether the uniform hub pricing should be extended to provide for a uniform network charge as well i.e. so that there was only a single tariff class for all Coastal users.¹²⁸⁴

The AER considered these issues raised in submissions and at the Round table discussion on tariffs, to ensure that no part of the network was bearing a greater proportion of the trunk charges based on location (rather than their capacity requirement), the AER examined the relative change in the network charges between the two access arrangement periods. The AER determined that the zone with the highest network demand tariffs in the earlier access arrangement period is still the zone with the highest demand network tariff under Jemena's proposal. This analysis holds when the trunk and network tariffs are combined.

In general, the driver for the increase in network tariffs is the increase in the total building block revenue,¹²⁸⁵ which accounts for about 34 per cent of the network tariff increase. In addition to this changes to the network tariff, reflect where the customer is located in the network (as it was previously) and the amount of gas the users transports. The AER notes that many submissions were received from users in parts of the network that have historically had high network tariffs i.e. users from the Sydney zones. As outlined Sydney has had higher network tariffs than zones in Newcastle and Wollongong. Submissions have also been received from users with significant loads, so the impact of blending the trunk tariff into the network block structure means that these users will also bear a larger proportion of the trunk charge than in the earlier access arrangement period. As outlined, the blending of the trunk tariff is based on deriving a notional trunk charge for each network tariff block. The notional trunk charge is based on 2009–10 trunk revenues and quantities for demand users across the

1280 Jemena, *Access arrangement information*, August 2009, appendix 15.1, pp. 7–19 (confidential).

1281 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, pp. 38–62.

1282 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, pp. 38–62.

1283 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 10.

1284 AER, *AER notes from the round table*, 11 December 2009, p. 6.

1285 NGR, r. 76.

coastal part of the network divided into the five tranches or blocks of gas consumed. The outcome of this estimation process is that the trunk charge is not uniform for each tranche or block of gas. It is also true that the estimation process results in a higher notional tariff charged for the tranche with the largest gas use.¹²⁸⁶

The AER investigated this allocation process for the trunk charges. It also considered whether an alternative hub pricing structure may result in a more reasonable allocation of trunk costs, for example the AER considered a flat charge to allocate the trunk costs to all demand customers instead of a block tariff approach. This resulted in more of the notional trunk charge being allocated to smaller customers, and only a small reduction in the notional trunk charge for large customers, who may also benefit from discounts that apply for the first response tariff. On balance and based on the incremental reductions for large gas users in rebalancing the notional trunk charge identified by this analysis the AER concluded that the allocation of the trunk charge proposed by Jemena was not unreasonable and provides for an allocation of the trunk charges consistent with the NGR requirements.¹²⁸⁷

Submissions requested that the AER assess whether the tariffs proposed are costs reflective.¹²⁸⁸ For example, the EMRF submits that the change from the Code to the NGR requires the AER to be more heavily involved in the development of the tariffs and their pricing structure than in previous distribution reviews.¹²⁸⁹ As outlined above for volume tariff classes, even though the AER recognises these concerns, the requirements about cost reflectivity set out in the Code, are different under the NGR. The NGR recognises that there is a range of efficient costs and tariff do not need to be set at the cost of service as was the case in the Code.¹²⁹⁰ The NGR does not require that each tariff reflects the actual cost of providing the reference service to each user. Instead, the NGR recognises that proposed tariffs can be set within the bounds of stand alone and avoidable costs. Jemena's proposal submits data to demonstrate that it complies with these requirements under the NGR.¹²⁹¹

A combined network and trunk tariff for each zone is based on tariffs that applied in the earlier access arrangement period.¹²⁹² These tariffs were based on a tariff setting methodology which accounted for the efficient cost of providing the reference service. In this way the proposed network tariffs takes into consideration the long run marginal costs and meets the requirements of the NGR for charging parameters.¹²⁹³ The AER also considers that Jemena's proposed charging parameters are determined having regard to transaction costs such as transportation costs, metering charges and administrative costs,¹²⁹⁴ as required by the NGR.¹²⁹⁵ Jemena's proposed network tariff

1286 Jemena, *Access arrangement information*, appendix 15.1, August 2009, pp. 7–19 (confidential).

1287 NGR, rr. 94(3) and 94(4).

1288 EnergyAdvice, *Submission to the AER*, 10 November 2009, pp. 9–10, 13, 15–16; EMRF, *Submission to the AER*, November 2009, pp. 14–15, 66–68, CSR, *Submission to the AER*, 10 November 2009, p. 2; EUAA, *Submission to the AER*, 10 November 2009, section 5.4.

1289 EMRF, *Submission to the AER*, November 2009, pp. 6–7.

1290 NGR, r. 94(3) and Code, ss. 8.1–8.2.

1291 NGR r. 94(3).

1292 Jemena, *Access arrangement information*, August 2009, appendix 15.1, pp. 7–19 (confidential).

1293 NGR, r 94(4).

1294 Jemena, *Access arrangement information*, August 2009, p. 184.

structure for demand customers reduces complexity of the demand tariffs in the access arrangement period compared with earlier access arrangement periods and thereby reduces transaction costs.

12.6.3.3 First response tariff

As outlined above, Jemena proposes a first response tariff class for demand coastal customers, which provides a 50 per cent discount for eligible users from the prevailing network tariff. Also, except for the 50 per cent discount the demand first response tariff classes are identical to the demand coastal tariffs. As a consequence the analysis undertaken in sections 12.6.3.1 and 12.6.3.2 is also relevant to demand first response tariff. The AER notes EnergyAdvice and the EMRF support the first response tariff category¹²⁹⁶, but AGL questions how the new tariff will be funded and also is concerned about its distortionary impacts on revenue.¹²⁹⁷ Qenos submits that it may be difficult for customers to meet the eligibility criteria for the first response tariff.¹²⁹⁸

The AER notes that in some cases even though tariffs have increased or decreased markedly, some users may benefit from heavily discounted tariffs if they are in a position to accept the conditions of the first response tariff.¹²⁹⁹ This is based on the assumptions made by Jemena about the take-up of the first response tariff,¹³⁰⁰ which will mitigate some of the large increases in the proposed network tariff (which combines the cost of trunk).

The EMRF states that Jemena should fully explain and justify how the overall revenue recovered from the tariffs for the largest gas users will be similar in real terms to the tariffs during the earlier access arrangement period.¹³⁰¹ The AER understands that the assumed revenue from the first response tariff will counterbalance (mitigate) the increase in revenue as a result of the initial adjustment to network tariffs for the increase in total revenue proposed and minimum demand bill. This results in Jemena recovering the same revenue in real terms from large users in comparison to what was the case in the earlier access arrangement.

The AER recognises that the consequences of both the changes to the network tariffs and the discounts that apply under the demand first response need to be considered in concert to provide an accurate analysis of the site-by-site impact of the new tariff structure on demand users. In many cases submissions made on the large increases in the network tariff have not outlined whether the affected user will also be in a position to take-up the first response tariff and therefore benefit from the large discount on offer.

1295 NGR, r. 94(4)(b).

1296 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 7 and EMRF, *Submission to the AER*, November 2009, p. 68.

1297 AGL, *Submission to the AER*, 10 November 2009, p. 8.

1298 Qenos, *Submission to the AER*, 11 November 2009, p. 2.

1299 Jemena, *Access arrangement proposal*, August 2009, pp. 51–52.

1300 Jemena, *Pricing model*, August 2009.

1301 EMRF, *Submission to the AER*, November 2009, pp. 68.

Jemena provides limited information to support the nature of the risk and the cost to it of curtailment of supply, or even in the event of supply curtailment, that this load shedding would not occur. Jemena does not demonstrate whether curtailment of supply is already accounted for within the proposed contractual or market arrangements with limited or no compensation. Although Jemena has provided limited information to support the first response tariff, the AER does not have any in principle issues with the provision of this service.

Further, Jemena's proposal for the demand first response tariff relies on key assumptions about the level of discount that should apply and the extent of take-up of the tariff by large users. Expected revenue is derived from the assumptions that all its users above 1800GJ chargeable demand will take-up the first response tariff.¹³⁰² The consequence of this is that large users that do not take up this first response tariff and small users below 1800 GJ chargeable demand, are paying higher network tariffs to fund the first response tariff than would otherwise be the case.

In relation to the assumptions made by Jemena, the AER considers that Jemena has not provided sufficient support to justify the 50 per cent discount proposed to induce customer to participate in the demand first response. Information provided does not support why a 50 per cent reduction compared to a lower discount may be warranted. The ACIL Tasman demand forecast report (the ACIL report) also questions the justification for the level of discount offered to first response customers.¹³⁰³ The AER does not consider that the level of discount is supported, except by way of reference discussions with 20 of the largest customers that indicated that they would need a significant discount to take-up the first response tariff.¹³⁰⁴ In the absence of information, to support the level of discount, the AER agrees with the ACIL report and requires Jemena to adjust the proposed discount.

In relation to the assumptions about the extent of take-up of the demand first response tariff among users Jemena outlines that after speaking to large customers during the preparation of the access arrangement proposal, all these customers indicated interest in the first response tariff.¹³⁰⁵ However, the AER considers that it is unrealistic to assume that all demand customers with a chargeable demand of greater than 1800 GJ will transition to the demand first response. This is because certain conditions must be met before a user is eligible for the first response tariffs and to receive the significant discount proposed.¹³⁰⁶

The AER has had confidential submissions¹³⁰⁷ put to it which verify that certain users are not able to take up the demand first response tariff because operational considerations such as production process requirements mean that: they cannot shut down at all; they cannot shut down without significant costs which outweigh the

1302 Jemena, *Pricing model*, August 2009 (confidential).

1303 ACIL Tasman, *Review of demand forecasts for Jemena for the access arrangement period commencing 1 July 2010*, 2 February 2010, p. 37. (ACIL, Demand forecast report, 2 February 2010).

1304 Jemena, Response to AER 17 December 2009 questions, 8 January 2010, pp. 3–4.

1305 Jemena, Response to AER 17 December 2009 questions, 8 January 2010, pp. 3.

1306 Jemena, *Access arrangement proposal*, August 2009, pp. 51–52.

1307 Based on confidential submissions.

benefits of the discount; or they cannot shut down within the response time required by Jemena.

Based on these submissions and in the absence of information from Jemena, the AER considers that a more realistic assumption is that at most 50 per cent of users with a chargeable demand of greater than 1800 GJ will take-up of the demand first response. The AER assumes that the other 50 per cent of the customers with a chargeable demand will remain on the default coastal capacity tariffs. The ACIL report states that Jemena should provide clear justification about the assumptions regarding the uptake amongst eligible first response customers.¹³⁰⁸ The AER notes that Jemena has offered that one alternative to confirming these assumptions is to sign-up customers in advance of the commencement of the access arrangement period, but that this is not its preference.¹³⁰⁹ The AER does not consider that this is appropriate but agrees with the ACIL report and requires Jemena to substantiate the forecast demand for the first response tariff, the AER requires that Jemena supports its revised proposal with information about actual take-up of the first response tariff.

As outlined above, the NGR requires Jemena's expected revenue from the proposed tariff classes to lie on or between avoidable and stand alone costs.¹³¹⁰ Based on information provided to it the AER does not consider that the proposed expected revenue from this new tariff category is based on reasonable assumptions and therefore the AER cannot be certain if the expected revenue complies with r. 94(3) of the NGR.

As outlined in amendment 12.3, Jemena must amend its access arrangement proposal to reduce the demand first response discount from 50 per cent to 25 per cent and the assumed take-up of the demand first response tariff is half of that assumed by Jemena. The quantities that are removed from the first response tariff classes are to be allocated to appropriate demand coastal tariff classes. The amendment also requires Jemena to allocate the increase in expected revenue as a result of amendment 12.3 to capacity demand coastal customers, thereby reducing network tariffs for capacity demand coastal customers. In addition, Jemena is required to support its revised proposal with information detailing the basis for the discount and the proportion of customers that are proposing to take-up the demand first response tariff (as substantiated by user negotiations).

12.6.3.4 Minimum bill charge

The AER considers that a volume customer receives a very different service to a demand customer.¹³¹¹ Since demand customers are offered a more constrained service¹³¹², it should be the case that the distribution charges for a given quantity of gas should be lower for a demand customer in comparison to a volume customer. The

1308 ACIL, *Demand forecast report*, 20 December 2010, p. 37.

1309 Jemena, Response to AER 11 December 2009 questions, 18 December 2009, pp. 3–4.

1310 NGR, r. 94(3).

1311 Volume customers pay for throughput, while demand customers usually pay for capacity.

1312 Demand customers usually pay for capacity, while volume customers pay for throughput. A capacity service is considered more constrained as the user has less flexibility with their gas usage. For instance, if on a particular day a user uses less gas than their MDQ, they still get charged for the entire MDQ. Volume customers have greater flexibility as they only pay for the gas they actually use.

AER agrees with EnergyAustralia's submission¹³¹³ that logic for the minimum bill charge for demand customers is flawed. EnergyAdvice also submits that it does not support the introduction of the minimum bill charge.¹³¹⁴ The AER notes that one objective of the proposed minimum bill is to smooth tariffs for volume customers transitioning to demand customers.¹³¹⁵ The AER also notes that the proposed minimum bill will allow Jemena to potentially recover much more revenue from small demand users than in the earlier access arrangement period. This is because of the higher tariffs implied by the minimum bill for demand customers that are just over the 10TJ per year consumption mark. In this way, the proposed solution to address the inefficient use of gas by volume customers may have the reverse effect for large volume users. In effect the minimum bill may result in some large volume users seeking to constrain consumption to avoid the minimum bill charge contra to the objective to promote the efficient use of gas.¹³¹⁶ The large volume users may avoid their gas consumption increasing above 10 TJ a year in order to avoid being reclassified as a small demand user which is charged at capacity rate. As a consequence, the AER considers that the minimum bill charge is not consistent with the national gas objective. Further, because of the likely response of smaller demand users to the minimum bill charge, which is higher than the underlying network tariffs, the AER does not consider that Jemena's proposal has had regard to r. 94(4)(b)(ii) of the NGR. As outlined in amendments 12.2 and 13.1, Jemena must remove the minimum demand bill requirement from the access arrangement proposal as it is not consistent with the national gas objective.¹³¹⁷

12.6.3.5 Legacy services

AGL and Origin submit that an explanation should be provided for the 40 per cent escalation in rates for legacy services.¹³¹⁸ However, the AER notes that legacy services are priced at a 5–6 per cent premium in comparison to the haulage reference services, as the proposed overall increase in tariffs is around 34.3 per cent. This equates to a 40 per cent increase in tariffs from the earlier access arrangement period.¹³¹⁹ The AER notes that Jemena only provides qualitative evidence to substantiate why legacy services should be priced at a 5–6 per cent premium. Namely, as an incentive to encourage customers to move to the new arrangements as well as to cover its higher administrative costs for dual billing arrangements and specific negotiation of the required updates to service terms.¹³²⁰ It does not substantiate these higher administrative costs. Jemena's proposal does not outline how a 5–6 per cent increase in tariffs will provide a disincentive for users to remain on existing contracts. Since legacy services are classified as reference service in chapter 2, Jemena must substantiate the costs associated with legacy services and demonstrate how these costs have been incorporated into total revenue. These costs then have to be allocated to

1313 EnergyAustralia, *Submission to the AER*, November 2009, p. 22.

1314 EnergyAustralia, *Submission to the AER*, November 2009, pp. 4, 22.

1315 Jemena, *Access arrangement information*, August 2009, p. 185.

1316 NGL, s. 23.

1317 NGL, s. 23.

1318 AGL, *Submission to the AER*, 10 November 2009, p. 9 and Origin, *Submission to the AER*, 10 November 2009, p. 1.

1319 Jemena, *Access arrangement information*, August 2009, p. 172.

1320 Jemena, *Access arrangement information*, August 2009, p. 172.

reference services as required by r. 93 of the NGR. In addition, the underlying reference tariff including the premium of 5–6 per cent, needs to be determined with reference to r. 94 of the NGR. The AER does not consider Jemena has not demonstrated that and the reference tariffs for legacy services are compliant with r. 93 or r. 94 of the NGR.

As required by amendment 12.4 the AER requires the premium on legacy services to be removed as the administrative costs are not separately identified and allocated as required by the NGR. Further, amendment 12.4 requires reference legacy services to be reflected in the tariff schedules contained in schedule 2 of the access arrangement proposal. The tariffs for legacy services must be compliant with r. 93 and r. 94 of the NGR.

12.6.3.6 Ancillary services

Since ancillary services are classified as reference services in pipeline services chapter (chapter 2), Jemena must demonstrate how the costs associated with ancillary services have been incorporated into total revenue. These costs then need to be allocated to reference services consistent with r. 94 of the NGR. As outlined in amendment 13.1 the ancillary services tariffs in schedule 2 of the access arrangement proposal must be updated so they are determined in accordance with r. 93 and r. 94 of the NGR.

12.6.3.7 Conclusion

The nature of tariff classes for demand customers has changed significantly for coastal customers from the earlier access arrangement period. However, given the expected revenue of each tariff class is between avoidable and stand alone costs, the AER considers Jemena's proposed tariff classes for demand users are consistent with the requirements of r. 94(3) of the NGR.

The proposed network charge (which includes a trunk charge) is consistent with the requirements of the NGR in setting tariffs for tariff classes and determining the charging parameters.¹³²¹

However in relation to four demand tariffs, as outlined above, the AER does not consider that the minimum bill, first response, legacy services or ancillary services tariffs are consistent with the NGR. These tariffs are required to be amended from Jemena's access arrangement proposal as outlined in amendment 13.1 in chapter 13, which sets out the new tariff schedule.

12.6.4 Meter data services

As outlined, meter data services, which are bundled with the network tariffs for volume and demand users.¹³²²

Jemena demonstrates that the expected revenue for meter data service is between avoidable and stand alone estimates.¹³²³ However, Jemena uses a proxy for standalone

1321 NGR, rr. 94(3) and 94(4).

1322 Jemena, *Access arrangement information*, August 2009, p. 169.

1323 Jemena, *Access arrangement information*, August 2009, appendix 15.3, pp. 5–6.

costs for meter data service since meter data services are provided by an external contractor.¹³²⁴

The meter data services proposed by Jemena are similar to the meter data services offered in the earlier access arrangement. The meter reading charge and provision of on site data communication equipment charge contains now only one charging parameter, unlike the earlier access arrangement which has two.¹³²⁵

As outlined for the volume and demand tariff classes the AER has not been provided with information to support the definition of stand alone and avoidable costs used by Jemena.¹³²⁶ The AER considers that if these services are provided by external parties that reference to an external contract costs may be reasonable. However, in the circumstances where the contract for the provision of meter services are not awarded by competitive tender or are provided by a related party, Jemena is still required to demonstrate how these costs are between avoidable and stand alone cost estimates, particularly as it uses a proxy for stand alone costs.

As also outlined, in the absence of this information however, the AER considers that these range of efficient costs under the NGR is large, and considers that the information provided by Jemena is sufficient to satisfy the requirements of the NGR.¹³²⁷

Again, as meter data services are provided by an external contractor, it may be reasonable that an external contractor subject to a competitive tender would not provide meter data services if it did not recover its long run marginal costs.¹³²⁸ However, Jemena has not provided any information about how the charging parameters for meter data services are compliant with r. 94(4) of the NGR.

The AER notes that, the nature of metered data services and charging parameters has not changed significantly from those approved by the IPART in the earlier access arrangement period.¹³²⁹ In the absence of information to support its proposal, but taking into consideration that the charging parameters for meter data services have not changed significantly from the earlier access arrangement period, the AER considers that the charging parameters for meter data services are consistent with r. 94(4) of the NGR.

EnergyAdvice and Origin question the 49 per cent increase in charges relating meter data services.¹³³⁰ The AER notes the increase in meter data services is due to an increase in total revenue requirement sought by Jemena. Further, the allocation of

1324 Jemena, *Access arrangement information*, August 2009, appendix 15.3, p. 4.

1325 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, pp. 38–57.

1326 NGR, r. 94(3).

1327 NGR, r. 94(3).

1328 Jemena, *Access arrangement information*, August 2009, appendix 15.3, p. 4.

1329 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, pp. 38–57.

1330 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 8. and Origin, *Submission to the AER*, 10 November 2009, p. 5.

total revenue or building block costs to meter data services is consistent with the rule requirement to allocate costs between reference and non reference services.¹³³¹ Therefore the proposed increase is mainly driven by the increased revenue proposed by Jemena. In addition, r. 94(5) of the NGR allows Jemena to adjust tariffs to recover revenue if the rule for tariffs and charging parameters that requires Jemena to take into consideration the long run marginal costs, transaction costs and customer price signals tariffs¹³³² do not does not allow Jemena to recover sufficient revenue.

The AER also notes, that unlike haulage services, meter data services will only change as a result of inflation within the access arrangement period.¹³³³

Conclusion

For reasons outlined above, the AER considers that the tariffs for Jemena's proposed meter data services can be explained and are consistent with the requirements of r. 94 of the NGR.

12.6.5 Prudent discounts

Service providers offer prudent discount to users in order to respond to competition from other providers of pipeline services or other services of energy. Alternatively, the service provider may offer prudent discounts in order to maintain the efficient use of the pipeline.¹³³⁴

Jemena has demonstrated that the prudent discount it currently provides are necessary to respond to competition from other providers of pipeline services or alternative energy sources and are required to maintain the efficient use of the pipeline.¹³³⁵ Further, Jemena has demonstrated that the negotiated revenue from each prudent discount services is higher than the estimate of the avoidable costs.¹³³⁶ Without the prudent discounts, tariffs would be higher for all other users, therefore the proposed prudent discounts are consistent with r. 96(2)(b) of the NGR.¹³³⁷

12.6.6 Other Considerations

12.6.6.1 Jemena's proposed initial adjustment to tariffs and X factors

The AER notes that Jemena proposes a price path in real dollars for an average price increase¹³³⁸ and X factors in section 15.4.1 of the access arrangement information

1331 NGR r. 93.

1332 NGR r. 94(4).

1333 Jemena, *Access arrangement information*, August 2009, p. 203.

1334 NGR, r. 60.

1335 NGR, r. 96(2)(a).

1336 Jemena, *Access arrangement information*, August 2009, p. 194 (confidential).

1337 This is a result of the prudent discounts service revenue contributing to recover some of the total networks fixed cost. This results in less fixed cost being shared by all customers which leads to lower tariffs for all customers.

1338 Jemena, *Access arrangement information*, August 2009, p. 178.

of -1.96 per cent.¹³³⁹ The AER notes that Jemena submits the X factors are constant over the access arrangement period.¹³⁴⁰

The AER notes Origin's¹³⁴¹ and AGL's¹³⁴² submissions regarding smoothing. The AER considers that smoothing is at the discretion of the service provider provided that, in terms of present value, forecast revenue from reference services over the access arrangement period equal the portion of total revenue allocated to reference services.¹³⁴³ The AER also notes that Table 10.2 in chapter 10 of the draft decision sets out the smoothed revenue for Jemena over the access arrangement period.

12.6.6.2 Withdrawal of reference services

Jemena proposes a procedure in section 3.6 of the access arrangement proposal for the introduction and withdrawal of haulage reference tariffs.¹³⁴⁴ Jemena does not provide any justification of why these procedures are required.

AGL submits that the proposed reference tariff policy should be amended to specify when an existing reference tariff may be varied or withdrawn, that a new reference tariff must be approved by the AER and to provide users with prior notice if an existing tariff is varied or withdrawn.¹³⁴⁵

The AER considers that the relevant process to consider changes to reference tariffs is through an access arrangement revision process, this may be scheduled as outlined in chapter 14 or unscheduled.¹³⁴⁶ As outlined in amendment 12.1, the AER requires Jemena to remove references to the introduction or withdrawal of haulage reference tariffs. Amendment 12.1 addresses the introduction and removal of tariffs raised by AGL.

12.6.6.3 Reference tariff policy

The AER considers that section 3 of the access arrangement must be renamed and its current title 'Reference Tariff Policy' deleted. This is because, unlike the Code, the NGR does not require a reference tariff policy and, as outlined in amendment 12.5, the AER considers the heading 'Reference tariffs and reference tariff variation mechanisms' to be more appropriate under the NGR.

The AER notes that in the Reference services agreement (Schedule 3 to the access arrangement proposal), Jemena proposes that if there is any inconsistency between section 3 of the access arrangement (which concerns tariffs and tariff variations) and the reference tariff schedule, the reference tariff schedule takes precedence.¹³⁴⁷ As outlined in chapter 13, the AER required Jemena to amend the access arrangement

1339 Jemena, *Access arrangement information*, August 2009, p. 201.

1340 Jemena, *Access arrangement information*, August 2009, p. 17.

1341 Origin, *Submission to the AER*, 10 November 2009, p. 6.

1342 AGL, *Submission to the AER*, 10 November 2009, p. 1.

1343 NGR, r. 92(2).

1344 Jemena, *Access arrangement proposal*, August 2009, pp. 26–27.

1345 AGL, *Submission to the AER*, 10 November 2009, pp. 3–4.

1346 NGR, r. 65.

1347 Jemena, *Reference service agreement*, August 2009, p. 15.

proposal so that the tariffs can be amended for past errors (refer to amendment 13.5). So that there is consistency between this proposed amendment for correction of errors, the AER considers that the tariff methodology rather than the tariff schedule should take precedence in the Reference services agreement. This is set out in amendment 12.6. This is the consistent with the National Gas Objective.¹³⁴⁸

12.7 Conclusion

As outlined above, the AER considers that:

- Volume and demand tariffs: Jemena's access arrangement proposal for haulage reference services complies with r. 93 and r. 94 of the NGR, but based on amendments to total revenue, demand, changes to the minimum bill and first response tariffs set out in chapters 10, 11, 12, volume and demand tariffs require amendment as set out in chapter 13.
- First response tariffs: Jemena's access arrangement proposal does not comply with r. 94 of the NGR and the AER requires Jemena to make the amendments set out below.
- Minimum bill tariffs: Jemena's access arrangement proposal does not comply with r. 100 of the NGR and the AER requires Jemena to make the amendments set out below.
- Legacy services: Jemena's access arrangement proposal does not comply with r. 93 or r. 94 of the NGR and the AER requires Jemena to make the amendments set out below.

12.8 Amendments required to the access arrangement proposal and access arrangement information

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 12.1: amend the access arrangement proposal to:

- delete clause 3.6 (including 3.6 H and 3.6 I)
- delete clauses 3.2(b), 3.2(d), 3.2(e) and 3.2(f)
- delete clause 3.4(c)(iii)
- delete clause 3.2(g) and replace it with the following:

Where the Service Provider makes a change to a Reference Tariff at any time in accordance with this section 3 of this Access Arrangement, the Service Provider will publish a revised Reference Tariff Schedule on the Service Provider's website which will take effect from the date specified in that revised Reference Tariff Schedule.

1348 NGL, s. 23.

- delete clauses 3.3(d), 3.3(e), 3.3(f), 3.3(g)(ii) and 3.3(i)
- delete clause 3.4(a) and replacing it with the following:

The Service Provider will follow the procedures set out below in varying an existing Reference Tariff during the Access Arrangement Period.
- delete clause 1.1 B(d) of schedule 2 – Initial Reference Tariff Schedule
- make all consequential amendments to the access arrangement proposal and access arrangement information to reflect the above.

Amendment 12.2: amend the access arrangement information by:

- delete the following bullet point from section 14.1:

removes perverse incentives at the volume/demand customer threshold by smoothing the pricing transition between these customer segments by introducing a minimum demand bill.
- delete the three paragraphs under the heading titled 'Minimum demand bill' included in section 14.3.4.

Amendment 12.3: amend:

- the access arrangement information (Jemena pricing model) to halve the demand forecasts for demand first response tariff classes that contain more than one customer. The quantities that are removed from the first response are to be allocated to appropriate demand coastal tariff classes
- the access arrangement proposal to reduce the demand first response discount to 25 per cent clause 1.2 F (d) of schedule 2
- the access arrangement information to reduce the demand first response discount to 25 per cent in section 14.3.4
- the additional revenue recovered by Jemena as a consequence of the amendments in this amendment 12.3, must only be used to reduce tariffs for all coastal demand customers on an equal percentage basis.

Amendment 12.4: amend:

- the access arrangement proposal to remove the premium associated with the legacy services in section 2.4
- the access arrangement information to remove the premium associated with the legacy services in section 13.3.2
- the access arrangement information to remove the premium associated with the legacy services in Schedule 2 – Initial Reference Schedule.

Amendment 12.5: amend the access arrangement proposal to delete the words 'Reference Tariff Policy' in the heading of section 3 and replace them with 'Reference Tariffs and Reference Tariff Variation Mechanism.' Make any and all subsequent amendments necessary to reflect this change.

Amendment 12.6: amend the access arrangement proposal to delete section 1.5 (b) of Schedule 3 and replace it with the following:

If there is any inconsistency between section 3 of the Access Arrangement and the Reference Tariff Schedule, unless otherwise provided, section 3 of the Access Arrangement takes precedence.

13 Tariff variation mechanism

13.1 Introduction

This chapter sets out the AER's consideration of Jemena's tariff variation mechanism. The purpose of the tariff variation mechanism is to equalise in present value terms the forecast revenue from reference services and the portion of total revenue allocated to reference services over the access arrangement period. The tariff variation mechanism includes both an annual tariff variation and a cost pass through mechanism. The tariff variation mechanism also includes administrative procedures for the AER to review and approve proposed changes to tariffs allowed under the mechanism.

13.2 Regulatory requirements

Rule 72(1)(k) of the NGR provides that the access arrangement information for a full access arrangement proposal must include the service provider's rationale for any proposed reference tariff variation mechanism.

Rule 92(1) of the NGR provides that a full access arrangement must include a mechanism for variation of a reference tariff over the course of an access arrangement period. Rule 92(2) of the NGR provides that the reference tariff variation mechanism must be designed to equalise in present value terms forecast revenue from reference services over the access arrangement period and the portion of total revenue allocated to reference services for the access arrangement period.

Rule 97(1) of the NGR provides that a reference tariff variation mechanism may provide for variation of a reference tariff:

- (a) in accordance with a schedule of fixed tariffs; or
- (b) in accordance with a formula set out in the access arrangement; or
- (c) as a result of a cost pass through for a defined event (such as a cost pass through for a particular tax); or
- (d) by a combined operation of 2 or more of the above.

Rule 97(2) of the NGR provides that a formula for variation of a reference tariff may (for example) provide for:

- (a) variable caps on the revenue to be derived from a particular combination of reference services; or
- (b) tariff basket price control; or
- (c) revenue yield control; or
- (d) a combination of all or any of the above.

In deciding whether a particular reference tariff variation mechanism is appropriate to a particular access arrangement, the AER must have regard to the factors in r. 97(3) of the NGR:

- (a) the need for efficient tariff structures; and

- (b) the possible effects of the reference tariff variation mechanism on administrative costs of the AER, the service provider, and users or potential users; and
- (c) the regulatory arrangements (if any) applicable to the relevant reference services before the commencement of the proposed reference tariff variation mechanism; and
- (d) the desirability of consistency between regulatory arrangements for similar services (both within and beyond the relevant jurisdiction); and
- (e) any other relevant factor.

Rule 97(4) of the NGR provides that a reference tariff variation mechanism must give the AER adequate oversight or powers of approval over variation of the reference tariff.

13.3 Jemena's proposal

Jemena proposes two reference tariff variation mechanisms as part of its access arrangement proposal for haulage reference services:

- a tariff basket annual tariff variation mechanism¹³⁴⁹
- a cost pass through mechanism.¹³⁵⁰

Jemena proposes to use a tariff schedule approach for meter data reference services and ancillary services which it submits will result in prices being constant in real terms over the access arrangement period.¹³⁵¹

13.3.1 Annual tariff variation formula mechanism

13.3.1.1 Haulage reference services

Jemena proposes a tariff basket approach for its tariff variation mechanism. Jemena states that the tariff basket approach is a well established mechanism in electricity and other gas jurisdictions.¹³⁵²

Jemena proposes a tariff basket annual tariff variation mechanism in the form of a weighted average prices cap (WAPC) formula. This approach relies on historical quantities from two year's prior to the tariff variation year and allows the price control to rely on actual rather than estimated quantity data.¹³⁵³

The proposed annual tariff variation formula mechanism can be represented as:¹³⁵⁴

¹³⁴⁹ Jemena, *Access arrangement information*, August 2009, p. 197.

¹³⁵⁰ Jemena, *Access arrangement information*, August 2009, pp. 205–221.

¹³⁵¹ Jemena, *Access arrangement information*, August 2009, p. 203.

¹³⁵² Jemena, *Access arrangement information*, August 2009, p. 200.

¹³⁵³ Jemena, *Access arrangement information*, August 2009, p. 201.

¹³⁵⁴ Jemena, *Access arrangement proposal*, August 2009, p. 16.

$$(1 + CPI_t)(1 - X_t)V_t \geq \frac{\sum_{x=1}^n \sum_{y=1}^m p_t^{xy} q_{t-2}^{xy}}{\sum_{x=1}^n \sum_{y=1}^m p_{t-1}^{xy} q_{t-2}^{xy}}$$

The right hand side of the equation determines the actual tariff change calculated by the WAPC methodology. The left hand side of the equation determines the maximum possible change in the tariff basket.

For the financial years commencing on or after 1 July 2011 Jemena proposes that the tariff basket will increase to account for:

- inflation (CPI)¹³⁵⁵
- pre-determined real changes in tariffs (X factor)¹³⁵⁶
- annual variation factor (V) which accounts for:
 - the difference in the previous year between the allowance for UAG costs included in the cost of service and the recoverable¹³⁵⁷ UAG cost¹³⁵⁸
 - weather variation adjustment which adjusts tariffs for the difference between the number of heating degree days (HDDs) assumed in the demand forecasts used to determine the approved cost of service in a specific financial year and the number of HDDs that actually occurred in that financial year¹³⁵⁹
 - licence fee event pass through¹³⁶⁰
 - other events which account for the financial impact on the service provider arising from a change in tax event, a business continuity event, a market cost event and a declared retailer of last resort event.¹³⁶¹

Jemena proposes to apply the tariff basket to all of its haulage reference tariffs for all tariff classes.¹³⁶²

13.3.1.2 Other reference and non-reference services

Jemena proposes to maintain its prices for meter data reference services and ancillary services in real terms over the access arrangement period.¹³⁶³ Jemena will publish a

1355 Jemena, *Access arrangement proposal*, August 2009, p. 17.

1356 Jemena, *Access arrangement proposal*, August 2009, p. 17.

1357 The product of: the latest forecast of gas receipts; the average UAG purchasing cost per gigajoule; UAG Target Rate or, where the UAG Rate is greater than the UAG Target Rate, the lesser of the UAG Rate and the UAG Tolerance Rate.

1358 Jemena, *Access arrangement proposal*, August 2009, pp. 21–23.

1359 Jemena, *Access arrangement proposal*, August 2009, pp. 18, 23–24.

1360 Jemena, *Access arrangement proposal*, August 2009, pp. 18, 25.

1361 Jemena, *Access arrangement proposal*, August 2009, pp. 25–26.

1362 Jemena, *Access arrangement information*, August 2009, p. 202.

list of real prices adjusted for inflation for each year of the access arrangement period when varying these tariffs.¹³⁶⁴

13.3.2 Cost pass through tariff variation mechanism

13.3.2.1 Events

Jemena proposes the following cost pass through events:

- changes in tax event—this covers any changes to the taxation paid by Jemena which are outside Jemena's control¹³⁶⁵
- licence fees and statutory charges—this relates to any licence fees and statutory charges to NSW and national bodies that Jemena must pay over the access arrangement period.¹³⁶⁶
- regulatory events—this relates to certain costs associated with changes in a regulatory obligation or requirement including:¹³⁶⁷
 - National energy customer framework (NECF)—this relates to costs associated with changes to Jemena's access arrangement resulting from the introduction of the NECF¹³⁶⁸
 - National gas connections framework (NGCF)—this relates to costs associated with changes to Jemena's access arrangement resulting from the NGCF¹³⁶⁹
 - Australian Energy Market Operator (AEMO)—this relates to costs that may affect the operation of Jemena's access arrangement resulting from the introduction and amendment of AEMO legislative instruments¹³⁷⁰
 - short term trading market (STTM)—this relates to costs incurred by Jemena as a result of obligations arising from the operation of the STTM¹³⁷¹
 - financial failure of a retailer—is an event where Jemena proposes a pass through arrangement for the difference between the credit support made available by a retailer that fails and the amount of unpaid bills from the retailer¹³⁷²

1363 Jemena, *Access arrangement information*, August 2009, p. 203.

1364 Jemena, *Access arrangement information*, August 2009, p. 203.

1365 Jemena, *Access arrangement information*, August 2009, p. 211.

1366 Jemena, *Access arrangement information*, August 2009, pp. 211–212.

1367 Jemena, *Access arrangement information*, August 2009, p. 212.

1368 Jemena, *Access arrangement information*, August 2009, pp. 212–216.

1369 Jemena, *Access arrangement information*, August 2009, pp. 216–217.

1370 Jemena, *Access arrangement information*, August 2009, pp. 217–218.

1371 Jemena, *Access arrangement information*, August 2009, pp. 218–219.

1372 Jemena, *Access arrangement information*, August 2009, p. 219.

- retailer of last resort (ROLR)—if a retailer fails then a ROLR event may occur. This event may trigger pre-existing procedures that pass a cost onto Jemena, including administrative costs from transferring the customers of a failed retailer to the retailer of last resort within a short time period¹³⁷³
- business continuity—some potential risks from events may affect Jemena’s business continuity but are too expensive to insure fully such as extreme weather events or major civil unrest¹³⁷⁴
- climate change policy and implementation costs—this relates to increased costs of complying with government policies regarding climate change.¹³⁷⁵

13.3.2.2 Administrative threshold

Jemena proposes that a materiality threshold will not apply to cost pass through events that are assessed as part of the annual variation of the haulage reference tariff. Cost pass through events considered within a financial year will be subject to a materiality review.¹³⁷⁶

13.3.3 Oversight procedures cost pass through tariff variation mechanism

Jemena proposes that if it intends to vary the haulage reference tariffs for a financial year, it will submit a variation notice to the AER at least 30 business days before the start of the financial year. For variations of haulage reference tariffs within a financial year, Jemena proposes to submit a variation notice to the AER 50 business days before the date on which the haulage reference tariffs are intended to be varied.¹³⁷⁷

Jemena proposes that if the AER fails to provide Jemena with written notification of its decision within 20 business days of receiving the variation notice, the AER will have been deemed to have approved the proposed tariff variation notified.¹³⁷⁸

13.4 Submissions

13.4.1.1 AGL

AGL Energy (AGL) submits that the proposed timing for approval of annual tariff variations implies that the network charge will be approved by the AER at least 10 business day before 1 July which is insufficient time to implement retail tariffs. Instead, 20 business days before 1 July will allow sufficient time for determining new retail tariffs.¹³⁷⁹

1373 Jemena, *Access arrangement information*, August 2009, pp. 219–220.

1374 Jemena, *Access arrangement information*, August 2009, p. 220.

1375 Jemena, *Access arrangement information*, August 2009, pp. 209–210, 212.

1376 Jemena, *Access arrangement proposal*, August 2009, p. 20.

1377 Jemena, *Access arrangement proposal*, August 2009, p. 13.

1378 Jemena, *Access arrangement proposal*, August 2009, pp. 14–15.

1379 AGL, *Submission: JGN access arrangement 2010–2015, 10 November 2009*, p. 4 (AGL, *Submission to the AER*, 10 November 2009).

AGL submits that the procurement costs of UAG in the reference tariff variation mechanism should be transparent.¹³⁸⁰

13.4.1.2 EnergyAdvice

EnergyAdvice makes a submission on behalf of several larger users of the Jemena Gas Network. EnergyAdvice submits that it does not support Jemena's proposed weather variation adjustment.¹³⁸¹ EnergyAdvice submits that the vast majority of businesses have to manage business risks associated with weather. EnergyAdvice submits that Jemena's network demand or large users are historically immune to much of the effects of weather and therefore should not be burdened with these costs.¹³⁸²

EnergyAdvice submits that the force majeure event clause in Jemena's proposed reference services agreement adequately protects Jemena for events covered by Jemena's proposed business continuity cost pass through event and there is no justification for Jemena passing on additional costs. EnergyAdvice also submits that the business continuity event proposed by Jemena is not limited to the circumstances listed in the event.¹³⁸³

13.4.1.3 EnergyAustralia

EnergyAustralia states that Jemena has proposed significant changes to its tariff variation mechanism but the proposed mechanism is consistent with that used in other jurisdictions. EnergyAustralia submits that Jemena's proposal for the UAG adjustment requires modification as the proposal allows Jemena to recover costs if actual UAG quantities increase by 10 per cent from the forecast level.¹³⁸⁴

EnergyAustralia submits that the price of gas used to determine the UAG adjustment should reflect the lowest price available in the market.¹³⁸⁵

EnergyAustralia submits that UAG tolerance level of 2.4 per cent rather than 2.7 per cent better reflects average historic UAG levels, and should also be used to determine the carbon permit costs in the UAG adjustment.¹³⁸⁶ EnergyAustralia also submits that for the purposes of tariff resetting and transparency, UAG costs and the costs for carbon emissions certificates should be separated out.¹³⁸⁷

1380 AGL, *Submission to the AER*, 10 November 2009, p. 5.

1381 EnergyAdvice, *Joint submission to AER on the Jemena gas networks (NSW) revised access arrangement — August 2009*, 10 November 2009, p. 8 (EnergyAdvice, *Submission to the AER*, 10 November 2009).

1382 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 18.

1383 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 17.

1384 EnergyAustralia Retail, *Jemena Gas Networks (NSW) Ltd's proposed 2010–2015 access arrangement & reference services agreement*, November 2009, p. 5 (EnergyAustralia, *Submission to the AER*, November 2009).

1385 EnergyAustralia, *Submission to the AER*, November 2009, p. 9.

1386 EnergyAustralia, *Submission to the AER*, November 2009, p. 23.

1387 EnergyAustralia, *Submission to the AER*, November 2009, p. 24.

EnergyAustralia also submits that if the weather variation adjustment is to be included, the AER should review the basis of 17 100GJ/HDD for alpha in the formula as no justification of this value is supplied in the access arrangement information.¹³⁸⁸

EnergyAustralia submits that clarification is needed about the definition of 'the year' in the proposed tariff variation formula.¹³⁸⁹

EnergyAustralia submits that the pass through of costs relating to other events in the tariff variation formula mechanism should be limited to reasonable costs.

EnergyAustralia submits that a materiality level should apply to cost pass throughs in the annual tariff variation process. The mechanism should also be symmetrical so material savings are also passed on to users.¹³⁹⁰

13.4.1.4 Energy Markets Reform Forum

The Energy Markets Reform Forum (EMRF) submits that the impact of the Carbon Pollution Reduction Scheme (CPRS) should be a cost pass through when Jemena's actual costs are known.¹³⁹¹

13.4.1.5 Energy Users Association of Australia

The Energy Users Association of Australia (EUAA) submits that demand forecasting issues should not be managed using cost pass throughs.¹³⁹²

The EUAA submits that Jemena needs to communicate potential changes in tariffs well in advance of the next financial year in order to allow users to factor changes into their budget processes.¹³⁹³

The EUAA submits that UAG is a standard issue for gas network service providers and it is not clear why Jemena is requesting the benchmark to move to 2.7 per cent.¹³⁹⁴

The EUAA submits that once the CPRS is in place the procurement cost of carbon should be treated as operating expenses. EUAA submits that gas users would expect Jemena to efficiently manage its carbon costs and pass on these efficiencies to end users.¹³⁹⁵

1388 EnergyAustralia, *Submission to the AER*, November 2009, p. 24.

1389 EnergyAustralia, *Submission to the AER*, November 2009, p. 23.

1390 EnergyAustralia, *Submission to the AER*, November 2009, p. 24.

1391 Energy Markets Reform Forum, *Australian Energy Regulator NSW gas distribution revenue reset, a response*, November 2009, p. 43 (EMRF, *Submission to the AER*, November 2009).

1392 Energy Users Association of Australia, *Submission to the AER on Jemena's gas networks' access arrangement proposal 2010/11–2014/15*, 10 November 2009, section. 4.2 (EUAA, *Submission to the AER*, 10 November 2009).

1393 EUAA, *Submission to the AER*, 10 November 2009, section 5.1.

1394 EUAA, *Submission to the AER*, 10 November 2009, section 6.

1395 EUAA, *Submission to the AER*, 10 November 2009, section 1.6.1.

The EUAA submits that, network businesses have to consistently manage weather risks in both gas and electricity.¹³⁹⁶

The EUAA does not support all cost pass throughs because they result in asymmetric movement in tariff increases which favour the service provider. The EUAA submits that, almost certainly cost reductions will not be passed through.¹³⁹⁷

The EUAA does not agree with Jemena's proposal that forecast carbon costs be passed through based on Jemena's forecast and notes traded market price forecasts are at best educated guesses and a different approach needs to be taken.¹³⁹⁸

13.5 AER's analysis and considerations

13.5.1 Annual tariff variation formula mechanism

13.5.1.1 Equalisation of revenue

The purpose of the annual tariff variation mechanism over the access arrangement period is to equalise in present value terms the forecast revenue from reference services and the portion of total revenue allocated to reference services.¹³⁹⁹

The AER considers that Jemena's access arrangement proposal complies with r. 92(2) of the NGR. However, forecast revenue from reference services must be amended as set out in amendment 13.1. This is required to reflect the changes to the forecast total revenue component in the access arrangement period, as a result of changes to the building block components which make up total revenue.¹⁴⁰⁰ Further, this is required to reflect changes to forecast demand. The changes in total revenue are outlined in the total revenue chapter of the draft decision (chapter 10) and changes to forecast demand are outlined in the demand chapter of the draft decision (chapter 11).

13.5.1.2 Appropriateness of the annual tariff variation formula mechanism

Jemena proposes to adjust tariffs using a tariff basket annual tariff variation mechanism in the form of a weighted average price cap formula.¹⁴⁰¹ The tariff basket may increase or decrease each year due to inflation, pre-determined real changes¹⁴⁰² and other factors allowed for in the annual variation factor.¹⁴⁰³ The proposed mechanism is significantly different to the tariff variation mechanism operating in the

1396 EUAA, *Submission to the AER*, 10 November 2009, sections 4.2, 6.

1397 EUAA, *Submission to the AER*, 10 November 2009, section. 6.

1398 EUAA, *Submission to the AER*, 10 November 2009, section. 1.6.1.

1399 NGR, r. 92(2).

1400 NGR, r. 76.

1401 Jemena, *Access arrangement information*, August 2009, p. 201.

1402 Through X-factors see Jemena, *Access arrangement information*, August 2009, p. 201.

1403 The annual variation factor adjusts tariffs for: weather variation, unaccounted for gas, pass through events (licence fee event, change in tax event, business continuity event, market costs event and declared retailer of last resort event). see Jemena, *Access arrangement proposal*, August 2009, pp. 20–26.

earlier access arrangement period¹⁴⁰⁴, which is limited to a CPI adjustment to all tariffs and an adjustment for UAG.¹⁴⁰⁵

This section considers the four core elements of Jemena's proposed annual tariff variation mechanism which are the weather adjustment factor, UAG adjustment factor, cost pass through adjustment factor and cost of capital adjustment. The AER notes that together these proposed adjustment factors are seeking to secure Jemena's total revenue over the access arrangement period, akin to the revenue caps for regulated electricity service providers. However, the AER notes in doing so that features of the electricity framework including periodic adjustments for under and over recovery of revenue are not a feature of Jemena's proposed annual tariff variation mechanism, where tariffs (prices) rather than revenue is capped. In this way, the proposed adjustment factor in the tariff variation mechanism may not provide for the symmetry present under the electricity framework. Specific elements of the adjustment factors are discussed below.

Weather adjustment factor

Jemena proposes a weather variation adjustment to address its revenue risk from unexpected weather conditions.¹⁴⁰⁶ The AER agrees with the EUAA that appropriate demand forecasting methodologies should be used to ensure revenue is recovered instead of using the weather variation factor.¹⁴⁰⁷ As also submitted by EnergyAdvice the vast majority of businesses have to manage business risks in relation to weather and it does not see why Jemena should be treated any differently.¹⁴⁰⁸

The AER notes the EUAA's submission that forecasting risk should not be managed through a tariff variation mechanism such as a cost pass through,¹⁴⁰⁹ and agrees that the NGR provides a means to address major changes in demand.¹⁴¹⁰ One reason why demand risk should not be adjusted for in isolation is that certain capital expenditure programs are linked to assumptions about demand. As a result changes in forecast demand within the access arrangement period also need to be reflected in relevant building block costs such as capital expenditure. For example, Jemena deferred capital expenditure on market expansion projects as a direct result of changes to demand in the earlier access arrangement period (refer to chapter 3 for further details). In this way, Jemena's proposed weather adjustment factor seeks to account for the tariff effects of changes in demand but not the impacts on the total cost of providing pipeline services. Adjustments for the tariff effects of changes to demand and not changes to total revenue (that is also impacted by those demand changes) will invariably impact the relationship between the present value of the expected revenue

1404 The access arrangement for the period 1 January 2005 to 30 June 2010.

1405 In the earlier access arrangement period, Jemena's tariff were adjusted annually to account for the variation between the allowance for UAG included in the cost of service and multiple of the latest forecast of gas receipts, the forecast UAG level, the actual average price per gigajoule paid for gas pursuant to the competitive tender or tenders during the year. See Jemena, *Access arrangement for the NSW Network*, 7 March 2007, p. 55.

1406 Jemena, *Access arrangement information*, August 2009, p. 210.

1407 EUAA, *Submission to the AER*, 10 November 2009, sections 4.2, 6.

1408 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 18.

1409 EUAA, *Submission to the AER*, 10 November 2009, section 4.2.

1410 NGR, r. 65.

and total revenue which is required to be equalised through the tariff variation mechanism under the NGR.¹⁴¹¹ Inclusion of the proposed weather variation adjustment addresses under-recovery of total revenue but as a consequence does not maintain the required present value¹⁴¹² of total revenue and expected revenue over the access arrangement period.

The AER also considers that the weather adjustment factor may result in inefficient tariffs over the access arrangement period.¹⁴¹³ Given that the annual tariff variation mechanism is a tariff basket, Jemena's proposal provides it with discretion about how it adjusts tariffs within this basket. As submitted by EnergyAdvice, demand (large volume) customers are historically immune to the effects of weather,¹⁴¹⁴ and should not be exposed to tariff variation as a result of weather effects. Therefore, Jemena's proposal may impact tariffs that are not affected by weather variation, leading to inefficient tariffs.

Further, the AER considers that the proposed weather adjustment will result in higher administrative costs for Jemena, users and the AER.¹⁴¹⁵ The proposed adjustment factor is complex and as discussed below, incorporates several other adjustment factors including a UAG and a cost pass through adjustment. The inputs for the weather adjustment factor are not readily discernable and verifiable by third parties including the AER. As EnergyAustralia submits, Jemena has not provided any justification for setting alpha in the weather variation formula at 17 100 GJ/HDD.¹⁴¹⁶ Should the adjustment factor be accepted, further information would be required from Jemena to demonstrate the robustness of the weather variation factor adjustment mechanism by providing independently verifiable information to support the adjustment. This would also increase administrative costs for Jemena, users and the AER.¹⁴¹⁷

The proposed adjustment is also unlike annual tariff variation mechanisms in other access arrangements, which generally only reflect CPI adjustments.¹⁴¹⁸ In this way, the proposed weather adjustment is not consistent with other previous regulatory arrangements.¹⁴¹⁹

UAG adjustment factor

The proposed UAG adjustment factor is different to that operating in the earlier access arrangement period. In the earlier access arrangement period, UAG costs were allocated efficiently between demand and volume customers.¹⁴²⁰ Given Jemena

1411 NGR, r.92(2).

1412 NGR, r. 92(2).

1413 NGR, r. 97(3)(a).

1414 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 18.

1415 NGR, r. 97(3)(b).

1416 EnergyAustralia, *Submission to the AER*, November 2009, p. 24.

1417 NGR, r. 97(3)(b).

1418 NGR, r. 97(3)(d).

1419 NGR, r. 97(3)(c).

1420 In the earlier access arrangement, 84.6 per cent of the total cost associated with the UAG adjustment was allocated to the tariff market, while 15.4 per cent was allocated to the contract market (no UAG adjustment

proposes a weighted average basket of prices, the UAG adjustment may result in inefficient tariffs over the access arrangement period. This is because, as discussed in relation to the weather adjustment factor, the proposed tariff basket provides Jemena with discretion to adjust tariffs within this basket and therefore alters the relative weights of tariff changes for different tariff classes over the access arrangement period. The UAG costs may be allocated under the proposed discretionary tariff variation mechanism, which change the efficiency of the tariff structure over the access arrangement period.¹⁴²¹

The annual adjustment factor for UAG relates to the difference between forecast and actual costs and needs to be analysed and verified so the benefits derived from the adjustment are weighed up against the administrative costs of the service provider, AER and users.¹⁴²² The AER notes EUAA's submission,¹⁴²³ however, the AER considers that it is appropriate to adjust for UAG costs through a cost pass through mechanism subject to an administrative cost threshold,¹⁴²⁴ rather than an automatic adjustment through the annual tariff variation mechanism as proposed by Jemena. This is because the cost pass through tariff variation mechanism can take the administrative costs of Jemena, users, prospective users and the AER into consideration.¹⁴²⁵ This matter is considered in more detail below in section 13.5.2.4.

Cost pass through adjustment factor

As outlined by EnergyAustralia¹⁴²⁶ the proposed automatic cost pass through adjustment factor¹⁴²⁷ does not include a materiality threshold.¹⁴²⁸ Further it does not provide for any additional decision making time¹⁴²⁹ to consider more complex issues that may arise and require more detailed analysis when the AER reviews cost pass through applications. The AER considers that the proposed automatic cost pass through adjustment factor does not provide the AER with sufficient oversight or powers of approval for the AER.¹⁴³⁰ Therefore, the AER requires the cost pass through adjustment to be removed from the tariff variation formula mechanism. Consistent with the earlier access arrangement the AER considers the pass through mechanism should operate independent of the tariff variation formula mechanism.¹⁴³¹ Section 13.5.2.6 outlines an amendment that sets out the factors the AER will consider before it approves a cost pass through.

is allocated to the high pressure trunks). Jemena, *Access Arrangement Information for NSW Network*, 7 March 2007, pp. 21, 26.

1421 NGR, r. 97(3)(a).

1422 NGR, r. 97(3)(b).

1423 EUAA, *Submission to the AER*, 10 November 2009, section 1.6.1.

1424 NGR, r. 97(3)(b).

1425 NGR, r. 97(3)(b).

1426 EnergyAustralia, *Submission to the AER*, November 2009, p. 24.

1427 Jemena, *Access arrangement proposal*, August 2009, pp. 17–26.

1428 Jemena, *Access arrangement proposal*, August 2009, p. 20.

1429 Jemena, *Access arrangement proposal*, August 2009, pp. 14–15.

1430 NGR, r. 97(4).

1431 NGR, r. 97(3)(c).

Cost of capital adjustment

Jemena's tariff variation mechanism proposes that inputs in the annual variation factor are adjusted for by the weighted average cost of capital to take account of the time value of money.¹⁴³² This means a cost of capital adjustment is embedded in the annual tariff variation mechanism. The AER considers costs associated with pass through events, UAG and lost revenue due to weather variation, are not relevant costs to be adjusted by the weighted average cost of capital under the NGR.¹⁴³³

Summary

As outlined above, the AER considers that Jemena's annual tariff variation mechanism does not comply with r. 97(3) and r. 97(4) of the NGR. As a result, the AER requires the annual tariff variation formula mechanism to be amended as outlined in amendments 13.2 and 13.3 to remove the annual variation factor (V). The annual tariff variation formula mechanism will only adjust tariffs for CPI changes and pre-determined real changes (X factor). All other changes to tariffs will result from the cost pass through tariff variation mechanism discussed below.

13.5.1.3 Minor technical specification matters

There are a number of minor technical specification issues that the AER requires Jemena to address. These are addressed below.

Jemena's proposed tariff schedule is expressed in 2009–10 dollars and the initial reference tariffs will be subject to an escalation factor.¹⁴³⁴

The AER does not consider that a tariff variation mechanism which requires tariffs to be varied on the first day of the access arrangement period i.e. on 1 July 2010 is practical. This would require a revision to tariffs that had been determined in May 2010 which would result in unnecessary administrative costs as the AER would need to be assesses the proposed tariffs prior to 1 July 2010.¹⁴³⁵ The annual tariff variation mechanism needs to be amended as outlined in amendment 13.1 so the first annual tariff variation is made for the year commencing 1 July 2011. As a consequence, schedule 2 of the access arrangement proposed must be amended to be indexed in real 2010–2011 dollars.

As submitted by EnergyAustralia,¹⁴³⁶ the AER considers that clarification is needed in the annual tariff variation formula. The definition of the reference year is not clear.¹⁴³⁷ Therefore, amendment 13.2 requires the definition of the time subscript in the formula to be changed.¹⁴³⁸

1432 Jemena, *Access arrangement proposal*, August 2009, pp. 23–26.

1433 NGR, rr. 76, 78, 87.

1434 Jemena, *Access arrangement proposal*, August 2009, p. 50.

1435 NGR, r. 97(3)(b).

1436 EnergyAustralia, *Submission to the AER*, November 2009, p. 23.

1437 Jemena, *Access arrangement proposal*, August 2009, p. 16.

1438 NGR, r. 97(3)(e).

As outlined, the tariff variation formula proposed by Jemena does not limit its ability to set tariffs within the tariff classes. The only constraint is that the entire basket of tariffs does not increase by more than $(1+CPI)(1-X)V$.¹⁴³⁹ In addition to the issues raised about rebalancing of tariffs for the weather variation adjustment section 13.5.1.2, the AER is concerned that without a side constraint within a tariff class, Jemena is able to rebalance tariffs so that the underlying efficiency of the approved tariff structure changes over the access arrangement period.¹⁴⁴⁰ As outlined in amendment 13.2 the AER requires Jemena to include a side constraint to limit the magnitude by which tariffs can change annually. The AER considers that with the removal of the cost pass through adjustment factor, this amendment does not restrict changes to tariffs arising from the operation of the cost pass through mechanism.

In order for the tariff variation mechanism to be estimated consistently every year, the AER considers it appropriate for Jemena to amend its access arrangement proposal as outlined in amendment 13.4 to specify a rounding convention.¹⁴⁴¹ For example, Jemena could propose that rounding will take place at the last computational step and tariffs will be rounded to the nearest cent.¹⁴⁴² Alternatively, rounding can take place at every computational step¹⁴⁴³ and tariffs can be rounded to a certain amount of significant figures.

The AER also notes that Jemena's reference tariff variation formula requires that current tariffs are used as a basis to set tariffs in the following year of the access arrangement period. If an error was to occur in any one year of the access arrangement period this would be compounded over the access arrangement period, and the basis for setting tariffs in subsequent periods would be incorrect.¹⁴⁴⁴ These errors may also impact the underlying efficiency of the tariff structure. Jemena needs to include a clause in its access arrangement proposal to correct for errors in subsequent years arising from the proposed tariff variation mechanisms as outlined in amendment 13.5.

13.5.1.4 Oversight procedures for annual tariff variation formula mechanism

Jemena proposes to submit its annual tariff variation notice to the AER at least 30 business days before the variation is to commence and give the AER 20 business days to respond to the notification.¹⁴⁴⁵ Jemena's proposal leaves 10 business days to notify users of the proposed tariff change each year. As submitted by EUAA¹⁴⁴⁶ and

1439 Jemena, *Access arrangement proposal*, August 2009, p. 16.

1440 NGR, r. 97(3)(a).

1441 NGR, r. 97(3)(e).

1442 If tariffs are very small, rounding to the nearest cent may be inappropriate. For instance, a five cent tariff rounded to the nearest cent would require a minimum 10 per cent increase in a year in order for the tariff to increase to six cents. With a simple inflation adjustment, a 10 per cent increase may never occur throughout the access arrangement period causing the tariff to remain constant in nominal terms throughout the access arrangement period.

1443 Every computational step would have to be explained in this situation.

1444 NGR, 97(3)(e).

1445 Jemena, *Access arrangement proposal*, August 2009, pp. 13–14.

1446 EUAA, *Submission to the AER*, 10 November 2009, section 5.1.

AGL¹⁴⁴⁷ a 10 business day notification period for retailers does not provide users sufficient time to adjust retail tariffs.

The AER considers that the proposed 20 business days to assess an annual tariff variation notification does not provide it with adequate time to assess a tariff variation notification.¹⁴⁴⁸ As outlined in amendment 13.6 Jemena is required to provide a proposed tariff variation to the AER on the 15th April or next closest business day. This will provide the AER with approximately 30 business days to assess the tariff notification and users with 20 business days to implement the tariff changes. This is consistent with other regulatory arrangements for similar services.¹⁴⁴⁹ Further, as submitted by retailers, if they are provided with insufficient notification they will be exposed to additional administrative costs,¹⁴⁵⁰ as they may not have sufficient time or resources to determine new retail tariffs and submit their pricing proposals to the IPART in a shorter period of time. Users also suggest that the proposed truncated time for the AER to approve tariffs will not enable users to implement new tariffs on 1 July as is the case currently.¹⁴⁵¹

The 30 business days period to approve a tariff variation assumes applications are complete i.e. documents and analysis required to support the variation is provided. Where an application is incomplete or not substantiated, the assessment period may need to be extended. The AER requires that the access arrangement proposal be amended as outlined in amendment 13.6 to include a requirement to extend the decision making time period for approval of tariffs, when the AER requests further information from Jemena to substantiate a tariff variation application. The AER considers the ability to extend the decision making time is required to provide the AER with adequate oversight.¹⁴⁵²

Jemena proposes that if it does not provide an annual reference tariff variation notice to the AER at least 30 business days before the next financial year, then the tariffs for the next financial year will be varied automatically.¹⁴⁵³ Amendment 13.6 also seeks the removal of the automatic tariff variation mechanism, as it does not provide the AER with adequate oversight powers of approval.¹⁴⁵⁴

Consequential to amendment 13.6 which requires Jemena to notify a tariff variation on the 15th of April or the next closest business day amendment 13.7 require Jemena to use December quarter CPI data for its annual tariff variations, because the proposed CPI data for March data will not be available to Jemena at the time it is required to submit its tariff variation application.¹⁴⁵⁵

1447 AGL, *Submission to the AER*, 10 November 2009, p. 4.

1448 NGR, r. 97(4).

1449 NGR, r. 97(3)(d).

1450 NGR, r. 97(3)(b).

1451 AGL, *Submission to the AER*, 10 November 2009, p. 4.

1452 NGR, r. 97(4).

1453 Jemena, *Access arrangement proposal*, August 2009, p. 15.

1454 NGR, r. 97(4).

1455 NGR, r. 97(3)(e).

Jemena proposes that if the AER decides to not approve its proposed tariff variation, then it may resubmit a revised version of its notification, which the AER must consider.¹⁴⁵⁶ The AER considers that assessing a revised application will increase administrative costs for the service provider, users, potential users and the AER and will also impact the time frame for users required to adjust retail tariffs.¹⁴⁵⁷ As outlined in amendment 13.6, if the AER disallows a variation because it considers that it is inconsistent with, or not permitted under, the approved tariff variation mechanism, the AER may specify tariffs consistent with the approved tariff variation mechanism.

An important input in the proposed annual tariff variation mechanism is the use of past gas quantities to weight each tariff.¹⁴⁵⁸ The AER considers it is appropriate that Jemena is required to provide an independent statement support the actual gas quantities to allow the AER to verify the actual gas quantities used in the tariff formula variation mechanism, and to ensure it is applied consistently every year.¹⁴⁵⁹ The independent verification statement should provide for audited or verified quarterly and annual quantities for the calendar year consistent with the proposed changes in CPI. For this reason the AER requires Jemena to amend its access arrangement proposal as outlined in amendment 13.8 to provide for a verified statement of past actual gas quantities used to determine tariffs each year of the access arrangement period.

Further, the AER considers that Jemena should provide its workings, demonstrating how the proposed tariffs have been calculated in accordance with the tariff variation formula mechanism. This will allow the AER to more easily assess whether the tariff variation mechanism has been applied correctly and to facilitate the administrative efficiency of the approval process.¹⁴⁶⁰ It will also assist in reducing requests for further information from Jemena. The AER requires Jemena to amend its access arrangement proposal as outlined in amendment 13.9.

13.5.2 Tariff variation mechanism for cost pass through

13.5.2.1 Proposed defined events

Jemena proposes cost pass through events for a licence fee event, a tax change event, a business continuity event, market costs event and a declared retailer of last resort event.¹⁴⁶¹

The AER notes that Jemena's proposed market costs event applies to events which occur on or after 1 July 2009,¹⁴⁶² which means the tariff variation mechanism for cost pass throughs applies before the commencement of the access arrangement period. The AER considers that these costs can only be recouped as part of the cost pass

1456 Jemena, *Access arrangement proposal*, August 2009, p. 15.

1457 NGR, r. 97(3)(b).

1458 Jemena, *Access arrangement information*, August 2009, pp. 16–17.

1459 NGR, r. 97(3)(e).

1460 NGR, r. 97(4).

1461 Jemena, *Access arrangement proposal*, August 2009, p. 16.

1462 Jemena, *Access arrangement proposal*, August 2009, p. 19.

through mechanism in the current access arrangement period. This is because rule 92(1) of the NGR requires that a tariff variation mechanism applies over the course of an access arrangement period. To comply with the NGR, the market costs event needs to apply to costs to be passed through on or after 1 July 2010 as outlined in amendment 13.3.

The AER notes that Jemena has not consistently defined and named events in section 3.5 C (c) of its access arrangement proposal and section 16.6 of its access arrangement information. As a consequence, the AER requires Jemena to amend its access arrangement information as outlined in amendment 13.10.

The AER notes EnergyAdvice's submission that the force majeure clause in Jemena's proposed reference services agreement adequately protects Jemena in relation to its obligations and liabilities for the events covered by Jemena's proposed business continuity cost pass through event.¹⁴⁶³ The AER considers that the force majeure clause¹⁴⁶⁴ does not compensate Jemena for a variety of costs which it may incur as a consequence of the force majeure event. For example, any costs incurred by Jemena in repairing its gas network following a force majeure event cannot be recovered by Jemena under the reference services agreement. Therefore the AER considers the proposed force majeure event to be acceptable.

The AER notes that in the recent draft decisions on Country Energy's and ActewAGL's access arrangement proposals, it approved certain broadly defined events as cost pass through events.¹⁴⁶⁵ The AER notes EnergyAdvice's concerns with the use of such an approach.¹⁴⁶⁶ However, the AER considers that the criteria to be applied as outlined in amendment 13.11 by the AER when deciding whether to pass through such costs addresses these concerns.¹⁴⁶⁷

The AER considers that the proposed events subject to the amendment to the market costs event discussed above, can be considered to constitute cost pass throughs for a defined event tariff variation mechanism for the purpose of r. 97(1)(c) of the NGR.

13.5.2.2 General pass through event

The AER considers that a general pass through event needs to be included in the access arrangement proposal in addition to the events proposed. The key reason for this is if the nature and cost of these events were known at the time of the access arrangement proposal they would be included in the proposal. This is consistent with the approach applied in distribution determinations in electricity under the National Electricity Law and is desirable for consistency between similar services beyond the

1463 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 17.

1464 Jemena, access arrangement proposal, August 2009, schedule 3, clause 26, p. 70.

1465 AER, *Draft decision, Country Energy Wagga Wagga natural gas distribution network, access arrangement proposal, 1 July 2010 – 30 June 2015*, November 2009 (AER, *Draft decision, Country Energy access arrangement proposal*, November 2009) and AER, *Draft decision, ActewAGL, access arrangement proposal for the ACT, Queanbeyan and Palerang gas distribution network, 1 July 2010 – 30 June 2015*, November 2009, (AER, *Draft decision, ActewAGL access arrangement proposal*, November 2009).

1466 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 17.

1467 See sections 13.5.2.4, 13.5.2.5 and 13.5.2.6 of the draft decision.

relevant jurisdiction.¹⁴⁶⁸ This is reflected in amendment 13.3. Also as outlined above, the acceptance of costs for the general pass through event must meet the criteria that are outlined in amendment 13.11.

The AER considers that any CPRS related costs can be considered in the general pass through even, at least in the first few years of the scheme's implementation. But the AER agrees with the EUAA¹⁴⁶⁹ that over time costs like these should be able to be incorporated into forecast operating expenditure. As outlined in the operating expenditure chapter 9, carbon costs have been subtracted from Jemena's forecast operating expenditure. The general pass through event reflected in amendment 13.3 will pass through the actual carbon costs as incurred by Jemena. The proposed amendment also addresses the EUAA¹⁴⁷⁰ about the use of forecast costs, as the cost to be passed through are the actual carbon costs incurred. Further, the assessment criteria for cost pass throughs as outlined in amendment 13.11, also seeks to review the efficiency of these costs, consistent with r. 91 of the NGR.

13.5.2.3 UAG event

For the reasons provided in section 13.5.1.2, the AER does not accept that the UAG and weather adjustment factors should form part of the annual tariff variation formula. As required by amendment 13.3, the AER requires the UAG adjustment should be a defined event for the cost pass through mechanism. To address the concerns of EnergyAustralia¹⁴⁷¹ and EUAA¹⁴⁷² about the introduction of a target range for UAG, the AER does not approve the proposed target range. The AER considers a target range for UAG removes incentives for Jemena to reduce its UAG levels. The purpose of the UAG event is to reduce Jemena's risks associated with actual UAG costs (which is a function of the price of gas purchased and the actual gas throughput). As outlined in the operating expenditure chapter 9, the AER proposes Jemena will only receive an allowance of 2.34 per cent of actual gas throughput for UAG.

Further, the AER considers that the UAG event will only be assessed by the AER once a year and will be classified as low administrative cost pass through event. Consistent with the earlier access arrangement¹⁴⁷³, Jemena must provide an audited statement verified by an independent auditor (see section below) to substantiate the purchase cost of the UAG.¹⁴⁷⁴ The AER considers that carbon costs associated with UAG must be dealt with separately through the general pass through event (outlined in 13.5.2.2) and not through the UAG adjustment event. This also addresses EnergyAustralia's submission that the costs of UAG and carbon emission certificates should be separated out for the purpose of tariff setting and transparency.¹⁴⁷⁵

1468 AER, *Final decision, New South Wales distribution determination 2009–10 to 2013–14*, 28 April 2009, pp. 277–280 and NGR, r. 97(3)(d).

1469 EUAA, *Submission to the AER*, 10 November 2009, section 1.6.1.

1470 EUAA, *Submission to the AER*, 10 November 2009, section 1.6.1.

1471 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 23.

1472 EUAA, *Submission to the AER*, 10 November 2009, section 6.

1473 NGR, r. 97(3)(c).

1474 Jemena, *Jemena's NSW Gas Networks access arrangement 1 July 2005 to 30 June 2010*, 7 March 2007, p. 72.

1475 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 24.

13.5.2.4 Materiality thresholds

Jemena proposes that cost pass through events assessed at the time of the annual tariff variation review will not be subject to a materiality threshold which the AER does not accept.¹⁴⁷⁶ Jemena proposes a materiality threshold for cost pass through events that occur throughout the year and notes that the AER must take into account Jemena's reasonable cash flow requirements when forming a view whether an event is material.¹⁴⁷⁷ EnergyAustralia submits that all pass throughs should be subject to some materiality threshold, regardless of whether the costs are part of the annual tariff process.¹⁴⁷⁸ The AER considers that the cost pass through materiality thresholds takes into consideration the administrative costs of the AER, Jemena and users as required under r. 97(3)(b) of the NGR and is consistent with other regulatory arrangements for cost pass through events.¹⁴⁷⁹ The AER notes Jemena's submission that it must take into consideration its cash flow requirements, which the AER is not required to do under r. 97(3). Notwithstanding this the AER considers that the materiality thresholds detailed below seek to differentiate between cost pass through events to balance Jemena's cash flow requirements and other considerations under the NGR. In this way, the low administrative cost events provide for an expedited process for more routine and easily verifiable costs. Other events are more likely to be one-off, material and/or unexpected, and require consultation and detailed consideration so Jemena's cash flow requirements will need to be balanced with also the interest of users and potential users.

Low administrative cost events

The AER considers that the UAG adjustment as well as tax change events (which are categorised as a separate cost pass through event) are appropriate for classification as low administrative cost events. The administrative costs for the AER to assess these events will be very low if Jemena can provide verifiable and independently sourced documentation (such as an invoice for externally incurred costs) with its cost pass through application. In most cases the efficient cost of these events can be supported by an invoice or fee statement to demonstrate the financial impact of the event and do not require detailed assessment or impose significant administrative costs on the AER. The proposed costs to be passed through for low administrative cost events will need to outweigh the administrative costs for users, Jemena and the AER. While this may be low, it is not zero. The AER will only consider cost pass through applications for all of these events once during each year of the access arrangement period and applications will need to be supported by verifiable documentation. In the case of the tax change event, Jemena will need to provide invoices which is evidence that the tax has been incurred. As outlined earlier in the case of the UAG adjustment, AGL has concerns about reasonableness of the actual UAG costs.¹⁴⁸⁰ Therefore, Jemena will need to provide a statement verified by an independent auditor which sets out the actual gas throughput. Further to address EnergyAustralia's submission about the cost of gas,¹⁴⁸¹ Jemena will need to demonstrate that the cost incurred is the lowest

1476 Jemena, *Access arrangement proposal*, August 2009, p. 20.

1477 Jemena, *Access arrangement proposal*, August 2009, p. 20.

1478 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 24.

1479 NGR, r. 97(3)(c).

1480 AGL, *Submission to the AER*, 10 November 2009, p. 5.

1481 EnergyAustralia, *Submission to the AER*, 10 November 2009, p. 9.

sustainable cost¹⁴⁸² (for example, the lowest of the cost of gas in an open competitive tender or available for purchase via the STTM).

The AER considers that introducing low administrative cost events also provides for consistency with other regulatory arrangements for similar services within and beyond the jurisdiction.¹⁴⁸³

As a consequence, the AER requires Jemena to amend its access arrangement proposal and access arrangement information as outlined in amendment 13.3 to include low administrative cost pass through events as defined events in the cost pass through mechanism.

Materiality threshold for other events

The AER considers that the proposed licence fee business continuity, market costs and declared retailer of last resort cost pass through events should be subject to a higher materiality threshold. Unlike low administrative events, these events will likely require consultation as well as detailed analysis, particularly requiring the AER to draw on external expert advice. A higher materiality threshold should apply so that costs that are proposed outweigh the administrative cost imposed on users, the AER and the service provider.¹⁴⁸⁴ The AER considers these types of events require a high materiality threshold. The AER considers that a cost pass through administrative threshold of 1 per cent of the total revenue approved in the year in which the cost is incurred has several advantages. An administrative threshold which is based on a percentage of total revenue approved reflects the scale of the service provider's operations over the access arrangement period. To meet the 1 per cent materiality threshold the AER considers that Jemena's proposed materiality threshold for cost pass through events should be amended as outlined in amendment 13.3. This approach is consistent with administrative thresholds for similar services within and beyond the jurisdiction¹⁴⁸⁵ as decided in the AER's recent draft decisions on Country Energy and ActewAGL's proposed gas access arrangement revision proposals.¹⁴⁸⁶ The AER notes that the 1 per cent of total revenue materiality threshold also applies to the general pass through event outlined in section 13.5.2.2 above.

Jemena's proposal states that cost pass through events will be subject to a materiality review.¹⁴⁸⁷ The AER considers that the access arrangement proposal should clarify that the administrative threshold must be met for each separate event.¹⁴⁸⁸ To address this omission the access arrangement proposal needs to be amended as set out in amendment 13.3.

1482 NGR, r. 91.

1483 AER, *Draft decision, Country Energy access arrangement proposal*, November 2009, chapter 11 and AER, *Draft decision, ActewAGL access arrangement proposal*, November 2009, chapter 13.

1484 NGR, r. 97(3)(b).

1485 NGR, r. 97(3)(d). Australian Competition Tribunal, *Application by EnergyAustralia and others (no. 2)* [2009] ACompT9, paragraph 9.

1486 AER, *Draft decision, Country Energy access arrangement proposal*, November 2009, chapter 11 and AER, *Draft decision, ActewAGL access arrangement proposal*, November 2009, chapter 13.

1487 Jemena, *Access arrangement proposal*, June 2009, p. 20.

1488 NGR, r. 97(3)(e).

13.5.2.5 Other matters

There are two other matters the AER considers Jemena is required to amend in the proposed cost pass through mechanism. These are outlined below.

The AER considers that the access arrangement proposal should set out factors the AER must take into consideration when assessing whether an event is a cost pass through event.¹⁴⁸⁹ Amendment 13.11 sets out the factors which the AER needs to consider in assessing a cost pass through event:

- the costs to be passed through are for the delivery of pipeline services
- the total costs to be passed through are building block components of total revenue
- the costs to be passed through meet the relevant National Gas Rules criteria for determining the building block for total revenue in determining reference services
- any other factors the AER considers relevant and consistent with the NGL and NGR.

Finally, Jemena's access arrangement proposal needs to include a requirement to provide the AER with a statement verifying that the costs of any pass through events are net of any payments made by an insurer or third party which partially or wholly offsets the financial impact of that event (including self insurance).¹⁴⁹⁰ This is to ensure that only the net financial impact of an event is considered for a pass through event, as the financial impact of some events like insurance events may be partially or wholly compensated or reimbursed by insurers or third parties and need not be recouped through an increase in tariffs from users. This is outlined in amendment 13.12.

13.5.2.6 Oversight procedures and powers of approval for the cost pass through tariff variation mechanism

This section outlines the required amendments to provide the AER adequate oversight or powers of approval over variation of the reference tariff.¹⁴⁹¹

The most significant of these oversight and approval powers¹⁴⁹² is the decision making time for assessment of the cost pass through applications. Jemena proposes a decision making time of 20 business days,¹⁴⁹³ regardless of the complexity or cost under consideration.

As outlined in section 13.5.2.4 above, if Jemena provides supporting information from the relevant taxation or regulatory authority which substantiates the cost of low administrative cost events, the proposed decision making time may be appropriate. However, for the material threshold events, the AER considers that cost pass through

1489 NGR, r. 97(3)(e).

1490 NGR, r. 91, r. 97(3)(e).

1491 NGR, r. 97(4).

1492 NGR, r. 97(4).

1493 Jemena, *Access arrangement proposal*, August 2009, clause 3.4(d), p. 14.

applications are likely to require additional time for detailed analysis. The proposed decision making time of 20 business days is not sufficient for the AER to complete its analysis.

The AER considers that the access arrangement proposal needs to be amended as outlined in section 13.5.1.4 and amendment 13.4 to include an extension of the decision making time provision for cost pass through events. In addition, the AER proposes that an overall time limit needs to be set for the assessment of a cost pass through application of 90 business days. This includes extensions of decision making time as outlined in amendment 13.4.

In addition to the decision making time there are a number of other minor amendments required to be made to the access arrangement proposal to improve the oversight procedures and powers of approval relating to the cost pass through tariff variation mechanism.¹⁴⁹⁴ These are:

- Streamlining the assessment of the low administrative cost events to further reduce administrative costs¹⁴⁹⁵ by considering costs to be passed through once a year at the same time as the annual tariff variations as outlined in amendment 13.13.
- An amendment to the notification process to notify the AER when a cost pass through event other than a low administrative cost event occurs as also outlined in amendment 13.14. This notification must be made within 90 business days of the costs of the defined event being incurred. This is to remove the discretion about if, and when, Jemena needs to notify the AER of the occurrence of a material administrative threshold event. The amendment will remove the information asymmetry between the AER and service provider and lead to both cost increases and decreases being passed through in the cost pass through mechanism. This addresses the EUAA's¹⁴⁹⁶ and EnergyAustralia's¹⁴⁹⁷ concern about asymmetry in the proposed mechanism. This requirement is not intended in any way to prevent Jemena submitting an application for a cost pass through event at any time consistent with the approved notification procedures.

13.6 Conclusion

The AER does not propose to approve the tariff variation mechanism proposed by Jemena as it does not comply with r. 97 of the NGR and requires Jemena to make the amendments set out in below.

13.7 Amendments required to the access arrangement proposal

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

1494 NGR, r. 97(4)

1495 NGR, r. 97(3)(b).

1496 EUAA, *Submission to the AER*, 10 November 2009, section. 6.

1497 EnergyAustralia, *Submission to the AER*, November 2009, p. 24.

Amendment 13.1: amend the access arrangement proposal to:

- delete clause (b) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

The Initial Reference Tariffs are expressed in real 2010/2011 dollars

- delete clause (e) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

In addition to setting out the Initial Tariff Classes and the Initial Reference Tariffs, the Initial Reference Tariff Schedule sets out and explains the tariff components and assignment criteria used in determining the availability of different Reference Tariffs. Prices are expressed in real 2010/11 dollars and are exclusive of GST.

- delete the table in clause 1.2 F (a) of schedule 2 – Initial Reference Tariff Schedule and replace with it the following:

Customer Type	Tariff Class	Unit Rate – dollars per GJ of Chargeable Demand per annum (\$/GJ.CD.pa) Period ending 30 June 2011 Prices are real 2010–2011 GST exclusive dollars				
		First 200 GJ of CD	Next 400 GJ of CD	Next 1000 GJ of CD	Next 2000 GJ of CD	Rest of CD
Demand	DC-1	170.412	110.811	84.565	72.413	64.260
	DC-2	189.309	122.149	92.123	78.082	68.039
	DC-3	256.374	162.388	118.950	98.201	81.452
	DC-4	423.002	262.365	185.600	148.189	114.777
	DC-5	2266.074	1368.208	922.829	701.112	483.392
	DC-6	86.324	60.359	50.929	47.187	47.442
	DC-7	283.206	178.488	129.682	106.251	86.819
	DC-8	584.319	359.156	250.127	196.585	147.041
	DC-9	39.723	32.397	32.290	33.206	38.122
	DC-10	134.705	89.387	70.282	61.701	57.118
	DC-11	1784.139	1079.047	730.056	556.531	387.004
	DC-Country	Demand Capacity Rate for DC-Country is comprised of two components of demand charge; (i) the Capacity Distance Rate; and (ii) the Pressure Reduction Rate. See tables Capacity Distance Rate (cl F(b)), and Pressure Reduction Rate (cl F(c)) below. These charges will be calculated for each Delivery Point and expressed as a single rate \$/GJ.CD.pa for billing purposes.				

- delete the table in clause 1.2 F (b) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Distance Unit Rate – dollars per GJ of Chargeable Demand per annum per km (\$/GJ.CD.pa per km) Period ending 30 June 2011				
Prices are real 2010–2011 GST exclusive dollars						
		First 200 GJ of CD	Next 400 GJ of CD	Next 1000 GJ of CD	Next 2000 GJ of CD	Rest of CD
Demand	DC-Country	39.723	23.834	15.889	11.917	7.945
<p>Note: Rates apply per km of the straight line distance from the relevant country receipt point rounded up to the nearest 0.5 km as determined by the Service Provider.</p> <ul style="list-style-type: none"> delete the table in clause 1.2 F (c) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following: 						
Customer Type	Tariff Class	Pressure Reduction Unit Rate – dollars per GJ of Chargeable Demand per annum (\$/(GJ.CD).pa) Period ending 30 June 2011				
Prices are real 2010–2011 GST exclusive dollars						
		First 200 GJ of CD	Next 400 GJ of CD	Next 1000 GJ of CD	Next 2000 GJ of CD	Rest of CD
Demand	DC-Country	14.098	8.459	5.639	4.229	2.819
<ul style="list-style-type: none"> delete the table in clause 1.2 F (e) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following: 						
Customer Type	Tariff Class	Demand Throughput Rate (\$/GJ) Period ending 30 June 2011				
Prices are real 2010–2011 GST exclusive dollars						
		First 1667 GJ per month	Next 2500 GJ per month	Rest		
Demand	DT	3.900	3.143	2.635		

- delete the tables in clause 1.2 F (f) of schedule 2 – Initial Reference Tariff Schedule and replace them with the following:

Customer Type	Tariff Class		Standing Charge: \$/pa per delivery station Charges based on Delivery Point MHQ Period ending 30 June 2011 Prices are real 2010-2011 GST exclusive dollars				
			MHQ < 10 GJ/hr	MHQ 10 to < 50 GJ/hr	MHQ 50 to <100 GJ/hr	MHQ 100 to < 1000 GJ/hr	MHQ 1000 GJ/hr and greater
Demand	DC-1 to DC-11; DC-Country; DCFR-1 to DCFR-11	Single Run	3,604.522	4,866.883	9,459.925	12,778.160	16,823.523
		Double Run	7,209.044	9,733.765	18,919.851	25,556.320	33,647.046

Customer Type	Tariff Class	Standing Charge: \$/pa per delivery station Charges based on Delivery Point MHQ Period ending 30 June 2011 Prices are real 2010-2011 GST exclusive dollars	
		Charge per Delivery Station Charges based on meter capacity. Period Ending 30 June 2011. Prices are real 2010-2011 GST exclusive dollars	
Volume	V-Coastal & V-Country	For meters with capacity less than or equal to 6m ³ /hr	Fixed Charge \$29.934 pa
		For meters with a capacity of greater than 6m ³ /hr	Unit rate \$0.330/GJ, subject to a minimum charge per billing period of: \$XX per monthly billing period, or \$XX per quarter billing period

- delete the table in clause 1.2 F (g) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Volume Throughput Rate (\$/GJ)					
		Period ending 30 June 2011					
	Block size (GJ per month)	First 1.25 GJ	Next 1.5 GJ	Next 5.75 GJ	Next 75 GJ	Next 333.5 GJ	All additional
	Block size (GJ per qtr)	First 3.75 GJ	Next 4.5 GJ	Next 17.25 GJ	Next 225 GJ	Next 1000.5 GJ	
Volume	V-Coastal	10.489	6.036	5.801	5.674	4.935	3.759
	V-Country	10.288	5.835	5.599	5.473	4.734	3.558

- delete the table in clause 1.2 F (h) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Standing Charge – dollars per annum
		Period ending 30 June 2011
		Prices are real 2010-2011 GST exclusive dollars
Volume	V-Coastal & V-Country	51.591

- delete clause 1.2 F (i) of schedule 2 – Initial Reference Tariff Schedule.
- delete the table in clause 1.2 G (a) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Meter Reading Cycle	Meter Reading Charge- \$ per annum per delivery station Prices are real 2010–2011 GST exclusive dollars				
			Period ending 30 June 2011	Period ending 30 June 2012	Period ending 30 June 2013	Period ending 30 June 2014	Period ending 30 June 2015
Volume	All Volume Tariff Classes	Quarterly	4.46	4.46	4.46	4.46	4.46
		Monthly	47.16	47.16	47.16	47.16	47.16
Demand	All Demand Tariff Classes	Daily Meter Reading	828	828	828	828	828

- delete the table in clause 1.2 G (b) of schedule 2 – Initial Reference Tariff Schedule and replace it with the following:

Customer Type	Tariff Class	Provision of On Site Data and Communications Equipment - \$ per annum per delivery station Prices are real 2010-2011 GST exclusive dollars				
		Period ending 30 June 2011	Period ending 30 June 2012	Period ending 30 June 2013	Period ending 30 June 2014	Period ending 30 June 2015
Demand	All Demand Tariff Classes	1545	1545	1545	1545	1545

- delete clause 1.2 H of schedule 2 – Initial Reference Tariff Schedule and replace it with the following (the figures that appear as XX in the table below have to be updated as a consequence of ancillary services being classified as reference services in amendments 2.1 – 2.4. The ancillary services tariff must be set in accordance with r. 93 and r. 94 of the NGR):

Ancillary Fees

The Ancillary Fees are set out in the table below. Prices are real 2010/2011 dollars and are expressed exclusive of any GST:

Fee Type	Description	Charge
Request for service	For time spent assessing requirements, collating information and responding to a User (or Prospective User) when the User (or Prospective User) requests a new/additional/changed Service, tariff assignment, authorisation of overruns or change in chargeable demand.	XX, plus XX per hour after the first hour
Special meter read	For reads requested by a User rather than ordinary reads (for instance when the meter reader makes a special visit to read a particular meter out of the usual meter reading route or schedule). This service must be scheduled with a minimum 5 day notice period.	\$XX Charge applies per meter read
Temporary disconnection	This charge covers the temporary disconnection of supply to a single Delivery Point at the request of a User where temporary isolation of supply is required. A request for temporary disconnection is not a request to remove a delivery point from the User's Service Agreement or Legacy Reference Services Agreement. The specific method of isolation will be at the discretion of the Service Provider to ensure the site is able to be left in a safe state. The charge also covers the cost of subsequent reconnection. (This charge is for providing disconnection services in accordance with the Network Code in force at the date of commencement of this Access Arrangement.)	\$XX Charge applies per meter set
Permanent disconnection	This charge covers disconnection of supply to a single delivery point at the request of a User and where the User (on behalf of a Customer) also requests that the meter is not to be moved or removed. A request for permanent disconnection is also a request to remove a delivery point from the Users Service Agreement or Legacy Reference Services	\$XX Charge applies per meter set

	<p>Agreement. The specific method of disconnection will be at the discretion of the Service Provider to ensure the site is able to be left in a safe state. A request for reconnection must be made as a new connection request.</p> <p>(This charge is for providing disconnection services in accordance with the Network Code in force at the date of commencement of this Access Arrangement).</p>	
Decommissioning and meter removal	<p>This charge covers permanent decommissioning of a network connection including the removal of the meter. A request to permanently decommission is also a request to remove a delivery point from the Users Service Agreement or Legacy Reference Services Agreement. The specific method of disconnection will be at the discretion of the Service Provider to ensure the site is able to be left in a safe state.</p> <p>(This charge is for providing disconnection services in accordance with the Network Code in force at the date of commencement of this Access Arrangement).</p>	<p>Charges applies per meter</p> <p>(i) meters with a capacity of less than or equal to 6m3/hr: \$XX</p> <p>(ii) meters with a capacity of greater than 6m3/hr: \$XX</p>

Amendment 13.2:

- amend the access arrangement proposal to delete section 3.5 A and replace it with the following:

The Service Provider will implement its CPI-X price path for the Financial Years commencing on or after 1 July 2011 using the Annual Tariff Variation Mechanism specified as the following formula:

$$(1 + CPI_t)(1 - X_t) \geq \frac{\sum_{x=1}^n \sum_{y=1}^m p_t^{xy} q_{t-2}^{xy}}{\sum_{x=1}^n \sum_{y=1}^m p_{t-1}^{xy} q_{t-2}^{xy}}$$

where:

$$\frac{\sum_{y=1}^m p_t^{xy} * q_{t-2}^{xy}}{\sum_{y=1}^m p_{t-1}^{xy} * q_{t-2}^{xy}} \leq (1 + CPI_t)(1 - X_t) + 0.1$$

For all tariff x where $i = 1, \dots, n$

Where the tariff class has up to 'y' components where $y = 1, \dots, m$

Note: this side constraint formula applies to CPI changes only (and not cost pass throughs).

Where the Service Provider has n Reference Tariffs, which each have up to m tariff components, and where:

t is the Financial Year for which the tariffs are being set. For example for the 2011–2012 financial year, $t = 2012$;

p_t^{xy} is the proposed tariff for component y of Reference Tariff x in Financial Year t , i.e. the new tariff to apply in year t ;

p_{t-1}^{xy} is the tariff for component y of Reference Tariff x that is being charged at the time the notification is submitted to the AER for assessment. It is the tariff that applies in Financial Year $t-1$, i.e. the tariff that applies before the new tariffs come into effect;

q_{t-2}^{xy} is the quantity of component y of Reference Tariff x that was sold in Financial Year $t-2$;

CPI_t is defined in Section B;

X_t is defined by the alignment of the Service Provider's building block revenue requirement with the NPV of its forecast revenues and is determined to be:

–1.96% in 2011/12;

–1.96% in 2012/13;

–1.96% in 2013/14; and

–1.96% in 2014/15.

- amend section 15.4.1 of the access arrangement information to:
 - delete V_t from the second formula
 - delete the last two paragraphs
- delete the annual tariff variation events from Table 16–1 in the access arrangement information and update the list of pass through events in the Table to take into account the AER's draft decision on cost pass throughs set out in this chapter 13.

- amend section 16.1 of the access arrangement information to delete the last paragraph
- amend the access arrangement information to delete section 16.4 and replace it with the following:

JGN has considered the following criteria and information in order to determine which costs and events to propose as pass throughs and which are best included in JGN’s proposed opex forecasts:

Can the event be reasonably foreseen?

Are the details of the event firmly defined to enable JGN to establish confidently a cost forecast?

Does a pass through already apply consistent with rule 97(3)(c) of the NGR?

- delete section 16.5 of the access arrangement information.

Amendment 13.3: amend the access arrangement proposal to:

- delete section 3.5 C and replace it with the following:
 - (a) The Annual Tariff Variation Mechanism provides for annual adjustment in accordance with the approved price path (X factor) and for the variation of Reference Tariffs where there is an impact on the cost of providing Reference Services as a result of a cost pass-through event, the cost of which was not included in the amount of the Initial Reference Tariffs and price path.
 - (b) Cost pass-through events are:
 - a Licence Fee Event;
 - a Change in Tax Event;
 - a Business Continuity Event;
 - a Market Costs Event;
 - a Declared Retailer of Last Resort (ROLR) Event;
 - an Unaccounted for Gas (UAG) Adjustment Event;
 - a General Pass Through Event,

(any of which is a **Cost Pass-Through Event**)

where:

“Licence Fee Event” means the annual cost incurred by the Service Provider as a result of any decision by the AER, IPART, AEMO, the Gas Market Company or any other relevant regulator, authority or State or Commonwealth Government which has the effect of changing or introducing any authorisation fee, licence fee or statutory charge imposed on the

Service Provider which is related to the operation of the network.

“Change in Tax Event” means:

- (i) a change in the way, or rate at which, a Relevant Tax is calculated including a change in the application or official interpretation of Relevant Tax); or
- (ii) the removal of a Relevant Tax or imposition of a new Relevant Tax.

“Business Continuity Event” means any occurrence that may create, or may lead to, an interruption, disruption, loss and/or crisis in the Service Provider’s business for which the Service Provider does not have full insurance coverage as identified in the Service Provider’s Access Arrangement Information, including but not limited to, gas supply shortfall, tsunami, cyclone, pandemic illness and earthquake.

“Market Costs Event” means any

- (i) decision made by the AER, or any other authority;
- (ii) coming into force of any new statute, regulation, order, rule, subordinate legislation or other source of legal obligation on the Service Provider;
- (iii) change in any existing statute, regulation, order, rule, subordinate legislation or other source of legal obligation on the Service Provider; or
- (iv) change in any other document enforceable under any statute, regulation, rule or subordinate legislation;

which occurs on or after 1 July 2010, which has the effect of:

- (v) imposing minimum standards (including network design, operational or safety standards) on the Service Provider that are new or different from those applying immediately before 1 July 2010; or
- (vi) substantially altering the manner in which the Service Provider is required to undertake any activity forming part of, or ancillary to, its Reference Services (including, but not limited to, rules governing the operation of competitive gas markets or a requirement that a party other than, or in addition to, the Service Provider be required to comply with the obligation of a Service Provider for the Network under the National Gas Law and National Gas Rules);

such that the Service Provider incurs greater or lesser costs in providing the Reference Service than it did before the event occurred.

“Declared Retailer of Last Resort (ROLR) Event” means the occurrence of an event whereby the Service Provider incurs materially higher or lower administrative costs as a result of an existing retailer for Customers being unable to continue to

supply gas and those Customers being transferred to the declared retailer of last resort.

“**UAG Adjustment Event**” occurs when annual forecast UAG costs are different to the actual UAG costs incurred for that year.

“**General Pass Through Event**” means any other pass through event which occurs in the following circumstance:

1. An uncontrollable or unforeseeable event occurs during the access arrangement period, the effect of which could not have been prevented or mitigated by prudent operation risk management.

2. The costs of the event are not already included in building block revenue or reimbursed by a third party.

These events will be assessed at the time of application for consistency with the relevant National Gas Rules criteria. For the purpose of this definition, an event will be considered unforeseeable if, at the time the Service Provider lodged its access arrangement revision proposal, despite the occurrence of the event being a possibility there was no reason to consider that the event was more likely to occur than not to occur during the access arrangement period.

- (c) Subject to the AER’s approval, Haulage Reference Tariffs will be adjusted to pass through the costs of one or more of the Cost Pass-Through Events, subject to each individual pass through event meeting the materiality threshold. The materiality threshold is defined:
 - (i) for all Cost Pass-Through Events except Change in Tax Event and UAG Adjustment Event – at least 1 per cent of total revenue approved in the relevant year that a cost pass through cost is incurred;
 - (ii) for Change in Tax event and UAG Adjustment Event – where the change in cost incurred is greater than the administrative costs of the Service Provider, users and the AER in making and reviewing the Variation Notice. The incurred cost of these events must be readily verified by documentation such as invoices or independently audited information. A Change in Tax Event or a UAG Adjustment Event which cannot be independently documented will be subject to the materiality threshold in paragraph (i).

- delete section 3.5 D and replace it with:

Calculation of the UAG Adjustment

Reference Tariffs will be adjusted each year to account for the variation between the allowance for UAG included in the cost of service for the previous Financial Year in the Access Arrangement and the multiple of:

- (i) the latest forecast of gas receipts for the previous Financial Year;
- (ii) the forecast UAG level (2.34 per cent); and

(iii) the actual average price per gigajoule paid for gas pursuant to the gas being purchased by the cheapest means (for example via an open tender, Short term trading market (STTM) or any other cheaper alternative).

Reference Tariffs will be adjusted in the event that UAG is removed as a Network cost during the Access Arrangement Period.

- delete section 3.5 E
- delete section 3.5 F
- delete section 3.5 G

Amendment 13.4: amend section 3.4(b) in the access arrangement proposal to include a rounding convention.

Amendment 13.5: amend section 3.4(d) in the access arrangement proposal to include a new paragraph (vi) stating:

If it appears that any past tariff variation contains a material error or deficiency because of a clerical mistake, accidental slip or omission, miscalculation or misdescription, the AER may change subsequent tariffs to account for these past issues.

Amendment 13.6: amend:

- the access arrangement proposal to delete section 3.4 (b)(i) and replace it with the following:

Annual Variation of Reference Tariffs: Where the Service Provider proposes to vary the Haulage Reference Tariffs to apply from the start of the next Financial Year, it will submit a Variation Notice to the AER on the 15th of April or the next closest business day prior to the commencement of the next Financial Year.

- the access arrangement proposal to delete section 3.4 (b)(ii) and replace it with the following:

Variation of a Reference Tariff within a Financial Year: Where the Service Provider proposes to vary one or more Haulage Reference Tariffs within a Financial Year it will submit a variation notice to the AER at least on the 15th of April or the next closest business day, prior to the date upon which it intends to vary the amount of the Haulage Reference Tariff.

- the access arrangement proposal to delete section 3.4(b)(iii)
- the access arrangement proposal to delete section 3.4(b)(iv) and replace it with the following:

Any proposed changes to Haulage Reference Tariffs submitted by the Service Provider under this Access Arrangement must comply with the Annual Tariff Variation Mechanism.

- the access arrangement proposal to delete sections 3.4 (d)(i) and 3.4(d)(ii) and replace them with the following:

- (i) Within 30 Business Days of receiving the Service Provider's Variation Notice, the AER will inform the Service Provider in writing of whether or not it has verified the proposed Haulage Reference Tariff and/or Haulage Reference Tariff Components in the Service Provider's Variation Notice as compliant with the Annual Tariff Variation Mechanism.

The 30 Business Day period may be extended for the time taken by the AER to obtain information from the Service Provider, obtain expert advice or consult about the notification. However, the AER must assess a cost pass through application within 90 Business Days, including any extension of the decision making time.

- (ii) If the AER fails to provide the Service Provider with written notification of its decision within 30 Business Days (excluding any extension of time outlined in paragraph (i)) of receiving the Service Provider's Variation Notice, the AER will be deemed to have approved the variation proposed in the Variation Notice.

- the access arrangement proposal to delete section 3.4 (d)(v) and replace it with the following:

In relation to a Variation Notice relating to Haulage Reference Tariffs, in the event that the AER decides that any part of the proposal in the Variation Notice is not compliant for a new Financial Year t, then the AER may specify a variation that is consistent with the Annual Tariff Variation Mechanism.

- the access arrangement proposal to delete section 3.4 (e)
- the access arrangement information to delete the first sentence of section 15.4.2 and replace it with the following:

JGN will submit its annual reference tariff proposal to the AER for approval on the 15th of April or the next closest business day prior to the relevant financial year in which the proposed tariffs are to apply.

Amendment 13.7: amend the access arrangement proposal to delete section 3.5 B and replace it with the following:

Calculation of CPI adjustment

For the purpose of the Annual Tariff Variation Mechanism, CPI for a particular Financial Year means:

- (b) for a Financial Year beginning after 1 July 2010:
 - (i) the Consumer Price Index: All Group Index for the Eight State Capitals as published by the Australian Bureau of Statistics for the December Quarter immediately preceding the start of the relevant Financial Year; divided by
 - (ii) the Consumer Price Index : All Group Index for the Eight State Capitals as published by the Australian Bureau of Statistics for

the December Quarter immediately preceding the December Quarter referred to in paragraph (i),

(iii) minus one.

- (b) If the Australian Bureau of Statistics does not, or ceases to calculate and publish the CPI, then CPI will mean an inflation index or measure agreed between the AER and the Service Provider.

Amendment 13.8: amend the access arrangement proposal to include a new paragraph (iv) in section 3.4(c):

a statement to support the Gas Quantity inputs in the tariff variation formula. The statement must be independently audited or verified and the Quantity input must reflect the most recent actual annual quantities available at the time of tariff variation assessment. The actual Quantity should be provided as four quarters of Gas Quantity data reconciling to an annual total Quantity of Gas.

Amendment 13.9: amend the access arrangement proposal to delete section 3.4(c)(ii) and replace it with the following:

an explanation as to how the proposal complies with the Annual Tariff Variation Mechanism supported by workings demonstrating how the proposed tariffs have been estimated using the existing tariffs as a reference.

Amendment 13.10: amend the access arrangement information so the cost pass through events described section 16.6 are described and named according to the cost pass through categories set out in section 3.5 C (c) of the access arrangement proposal.

Amendment 13.11: amend the access arrangement proposal to include a new paragraph (vii) in section 3.4(d):

In making a decision whether or not to approve a Cost Pass-Through Event, the AER must take into account the following:

- A The costs to be passed through are for the delivery of pipeline services
- B The total costs to be passed through are building block components of total revenue
- C The costs to be passed through meet the relevant National Gas Rules criteria for determining the building block for total revenue in determining reference services
- D Any other factors the AER considers are relevant and consistent with the National Gas Law and National Gas Rules.

Amendment 13.12: amend the access arrangement proposal to include a new paragraph (viii) in section 3.4(d):

The Service Provider must provide to the AER a verification statement signed by an officer of the Service Provider stating that the financial impact of the Cost Pass-Through Event in a Variation Notice is net of any third party payments including insurer payments or reimbursements in connection with the event (including self insurance). The verification statement will also

provide information about the financial impact of the event and any reimbursements or payments made by a third party in connection with the event.

An application for a Change in Tax Event must be supported by information about the financial impact of the taxation change event from the relevant taxation or regulatory authority. An application for a UAG Adjustment Event must be supported by a statement verified by an independent auditor which sets out the actual gas throughput, the UAG charged to users and confirmation that the UAG was purchased at lowest cost of gas available at the time (for example, by an open competitive tender or in the STTM).

Amendment 13.13: amend the access arrangement proposal to include a new paragraph (ix) in section 3.4(d):

Tariffs will only change once a year on 1 July as a result of Change in Tax events and UAG Adjustment Events.

Amendment 13.14: amend the access arrangement proposal to include a new paragraph (x) in section 3.4(d):

Regardless of whether a Cost Pass-Through Event leads to tariffs increasing or decreasing, the Service Provider must notify the AER that a Cost Pass-Through Event other than Change in Tax Event and UAG Adjustment Event has occurred no later than 90 Business Days after the costs of a Cost Pass-Through Event have been incurred.

14 Non-tariff components

14.1 Introduction

This chapter considers the non-tariff components of Jemena's access arrangement proposal. The NGR states the circumstances in which a pipeline service will be a reference service and the terms and conditions on which service providers are to grant users or prospective users access to reference services.

14.2 Terms and conditions

14.2.1 Regulatory requirements

Rules 48(1)(d)(i) and 48(1)(d)(ii) require the reference tariff and other terms and conditions on which reference services will be provided to be included in a full access arrangement.

Decision making criteria

Under section 3.6 of the Code, the relevant regulator was required to decide on the reasonableness of the terms and conditions on which a service provider would supply reference services in the earlier access arrangement period. The AER notes that there is no equivalent provision in the NGR. However, r. 100 of the NGR requires that an access arrangement be consistent with the national gas objective and the rules and procedures in force when the terms and conditions of the access arrangement proposal are determined or revised.

The national gas objective is to promote efficient investment in, and efficient operation and use of, natural gas services for the long term interest of consumers of natural gas with respect to price, quality, safety, reliability and security of supply of natural gas.¹⁴⁹⁸

In making its final decision, the AER has reviewed the access arrangement proposal, including the Reference Services Agreement (Schedule 3 of the access arrangement proposal)¹⁴⁹⁹ and considered the issues concerning terms and conditions raised in submissions received, as well as issues raised at the roundtable discussion on 27 November 2009 (the Round table discussion on non-tariff issues) and in follow up correspondence provided by Jemena.¹⁵⁰⁰

An overview of the AER's assessment of the terms and conditions contained in Schedule 3 of the access arrangement proposal is attached as Appendix E. This sets out the AER's assessment of those terms and conditions in relation to which it received submissions but which it did not consider required amendment.

1498 NGL s. 23.

1499 As outlined in the definition of 'Agreement' in clause 1.1 of schedule 3 of the access arrangement proposal, this includes any documents or parts or documents incorporated by reference.

1500 Jemena, *Clarification following the round-table discussion of Jemena's access arrangement proposal (2010–2015) terms and conditions*, 18 December 2009.

The AER does not propose to approve those terms and conditions proposed by Jemena as discussed below as they do not comply with r. 48(1)(d)(i) and/or 48(1)(d)(ii) and r. 100 of the NGR and requires Jemena to make the amendments set out in sections 14.2.2 to 14.2.18.

The AER notes that Jemena may apply to the AER to vary the access arrangement under r. 65 of the NGR, should this prove necessary, for example, as a result of the introduction of the National Energy Customer Framework (NECF).

14.2.2 Ancillary services

Jemena's proposal

Jemena sets out a list of ancillary fees in schedule 1 of the access arrangement proposal¹⁵⁰¹ including a request for service, special meter read, temporary disconnection, permanent disconnection and decommissioning, and meter removal.

Submissions

AGL Energy (AGL) submits that Jemena has not provided sufficient information or definition surrounding ancillary fees. In particular, it is not clear whether a meter reading fee will be applied per site visit or per meter read at the premises.¹⁵⁰²

AER's analysis and considerations

The AER notes that Jemena has not included ancillary services in its definition of 'Reference Services'.¹⁵⁰³ This means that ancillary services are not subject to the terms and conditions for access set out in Schedule 3 of the access arrangement proposal and accordingly do not comply with r. 48(1)(d)(ii) of the NGR. Also, because the access arrangement proposal does not specify a reference tariff for ancillary services, the proposal does not comply with r. 48(1)(d)(i) of the NGR.

The AER does not propose to approve Jemena's proposed specification of the terms and conditions on which reference services will be provided as it does not comply with r. 48(1)(d)(i) and r. 48(1)(d)(ii) and r. 100 of the NGR. Jemena is required to specify the reference tariff for the ancillary services reference service and to clarify that special meter read fees will be levied on a per meter read basis as outlined in amendment 13.1.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.1: amend the access arrangement proposal and access arrangement information to state the terms and conditions on which the ancillary services reference service will be provided.

1501 Jemena, *Access arrangement proposal*, August 2009, schedule 1, pp. 60–61.

1502 AGL, *JGN Access arrangement 2010–2015*, 10 November 2009, p. 9 (AGL, *Submission to the AER*, 10 November 2009).

1503 Jemena, *Access arrangement proposal*, August 2009, schedule 3, chapter 1, p. 11; Jemena, *Access arrangement proposal*, August 2009, schedule 1, pp. 44, 60–61.

14.2.3 Legacy services

Jemena's proposal

Jemena proposes to offer legacy services. The status of these services is unclear, particularly whether Jemena proposes to offer them as reference services or non-reference services. For further details of Jemena's proposal see chapter 2.

AER's analysis and considerations

The AER notes that Jemena has not included legacy services in its definition of 'Reference Services'.¹⁵⁰⁴ This means that legacy services are not subject to the terms and conditions for access set out in Schedule 3 of the access arrangement proposal and accordingly the access arrangement proposal does not comply with r. 48(1)(d)(ii) of the NGR. Also, because the access arrangement proposal does not specify a reference tariff for legacy services, the proposal does not comply with r. 48(1)(d)(i) of the NGR (see chapter 12 for further details).

The AER does not propose to approve Jemena's proposed specification of the terms and conditions on which reference services will be provided as it does not comply with r. 48(1)(d)(i) and r. 48(1)(d)(ii) and r. 100 of the NGR. Jemena is required to specify the reference tariff and the other terms and conditions on which the legacy services reference service will be provided.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.2: amend the access arrangement proposal and access arrangement information to state the terms and conditions on which the legacy services reference service will be provided.

14.2.4 Meter data

Jemena's proposal

Jemena addresses the meter data service in clause 17 of Schedule 3 of the access arrangement proposal.

Submissions

EnergyAdvice Pty Ltd (EnergyAdvice) submits that demand customers should have a right to access their metering data directly from Jemena (without recourse to their retailer).¹⁵⁰⁵

AGL submits that Schedule 3 of the access arrangement proposal fails to state the parties' obligations regarding the accuracy of meter data, meter testing, meter reading and the correction of meter reading errors.¹⁵⁰⁶

1504 Jemena, *Access arrangement proposal*, August 2009, schedule 3, chapter 1, p. 11 and Jemena, *Access arrangement proposal*, August 2009, schedule 1, pp. 44, 60–61.

1505 EnergyAdvice Pty Ltd, *Joint submission to the AER on the Jemena gas networks (NSW) revised access arrangement – August 2009*, 10 November 2009, pp. 6, 18–19 (EnergyAdvice, *Submission to the AER*, 10 November 2009).

1506 AGL, *Submission to the AER*, 10 November 2009, p. 27.

AER's analysis and considerations

The AER considers that no legal relationship exists between Jemena and the end customer located at the delivery point (unless the end customer is a self-contracting user). Jemena contracts with the user (generally a retailer) and a separate contract governs the relationship between the user and the end customer. While the AER recognises that it may be open to Jemena to confer certain rights on end users, such as, for example, the right to access metering data, the NGR does not require or provide for this.

In considering AGL's submission, the AER has assessed whether the information stated in Schedule 3 of the access arrangement proposal is consistent with the national gas objective.¹⁵⁰⁷ It considers that the inclusion of a statement of the parties' obligations regarding the accuracy of meter data, meter testing, meter reading and the correction of meter reading errors would assist the parties in understanding their obligations and therefore further the national gas objective.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.3: amend the access arrangement proposal to include the following new clause 17.7 in Schedule 3:

In the event that the User reasonably forms the view that meter data information or a meter reading is incorrect, it shall notify the Service Provider of this in writing as soon as reasonably practicable stating the reason for their belief. The Service Provider undertakes to investigate the matter and advise the User of its findings without delay.

14.2.5 Amendments to Schedule 3 of the access arrangement proposal

Jemena's proposal

Jemena submits that it may seek the AER's approval to amend the terms of Schedule 3 of the access arrangement proposal during the access arrangement period.¹⁵⁰⁸ Clause 2.2, section C of the access arrangement proposal sets out a timetable for this process. This states that if the AER fails to provide Jemena with written notice of its decision within 20 business days after receiving Jemena's application, the AER will be deemed to have approved the proposed amendment.¹⁵⁰⁹

Clause 1.4 of Schedule 3 of the access arrangement proposal states that where clause 2.2, section C of the access arrangement proposal applies, or the AER has approved a new or revised access arrangement, Jemena will provide the user with written notice of the amendment. The user agrees (by deeming)¹⁵¹⁰ that such amendments are effective two business days from the date of the notice.

Jemena also submits that:

1507 NGL, s. 23.

1508 Jemena, *Access arrangement proposal*, August 2009, clause 2.2, section C(b), p. 7.

1509 Jemena, *Access arrangement proposal*, August 2009, clause 2.2, section C(d), p. 7.

1510 Clause 1.4(b), schedule 3 of the access arrangement proposal read in conjunction with clause 2.2, section C, access arrangement proposal.

- clause 1.4 of Schedule 3 of the access arrangement proposal is necessary to allow for the amendment of all user contracts to reflect variations to the access arrangement without going through a full revision process¹⁵¹¹
- clause 2.2, section C of the access arrangement proposal is necessary to facilitate variations to Schedule 3 of the access arrangement proposal within the access arrangement period.¹⁵¹²

Submissions

The AER received several submissions in relation to clause 2.2, section C of the access arrangement proposal. AGL expressed concern the clause provides Jemena with the ability to ‘gazette changes’ to the terms and conditions without receiving written notification from the AER.¹⁵¹³

EnergyAustralia submits that:

- the timeframe proposed by Jemena for the AER to approve amendments is insufficient to allow adequate consultation
- the application of changes effective two business days from the date of written notice is insufficient especially when changes may impact on customer agreements.¹⁵¹⁴

AGL submits that the two business days notice period that is proposed in clause 1.4 of Schedule 3 of the access arrangement proposal should be extended to 60 days notice at a minimum.

AER’s analysis and considerations

This matter was discussed at the Round table discussion on non-tariff issues regarding specific terms and conditions.¹⁵¹⁵ For the sake of clarity, the AER notes that:

- clause 2.2, section C of the access arrangement sets out the mechanism by which Jemena proposes to vary terms of the access arrangement
- clause 1.4 of Schedule 3 of the access arrangement proposal concerns the implementation of variations approved by the AER in contracts executed before the variation of the access arrangement.

Clause 2.2, section C of the access arrangement proposal is not in accordance with the process set out in Division 10 of Part 8 of the NGR for variations of applicable access arrangements. Section 1.4 of Schedule 3 of the access arrangement proposal cross-

1511 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, p. 4.

1512 Jemena, *Clarification following the round-table discussion of Jemena’s access arrangement proposal (2010–2015) terms and conditions*, 18 December 2009, p. 2.

1513 AGL, *Submission to the AER*, 10 November 2009, p. 8.

1514 EnergyAustralia, *Jemena Gas Networks (NSW) Ltd’s proposed 2010–2015 Access Arrangement & Reference Services Agreement*, November 2009, p. 6 (EnergyAustralia, *Submission to the AER*, November 2009).

1515 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 2–5.

references to the approval process—including the deeming of approval—set out in clause 2.2, section C of the access arrangement proposal.

The AER considers that all variations of a term or condition of the access arrangement (including Schedule 3 of the access arrangement proposal) should be submitted to the AER for approval under r. 65 of the NGR.

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 14.4: amend the access arrangement proposal to delete clause 2.2, section C(b) and replace it with the following:

The Service Provider may seek the AER's approval to amend the terms of the Reference Services Agreement during the Access Arrangement Period in accordance with Division 10 of Part 8 of the NGR.

Amendment 14.5: amend the access arrangement proposal to delete clause 2.2, section C(c) – 2.2, section C(f).

The AER has considered EnergyAustralia's submission, and further oral submissions from AGL and EnergyAustralia,¹⁵¹⁶ that it is not reasonable for a variation that has been accepted by the AER to flow through into agreements that have already been executed between the service provider and users with effect two business days from the date of Jemena's written notice advising of the change.¹⁵¹⁷ AGL and EnergyAustralia express concern that two business days does not provide a sufficient period of time especially when changes may impact on customer agreements.¹⁵¹⁸

On the basis of the information provided by users as outlined above and having regard to amendment 14.4, the AER considers a period of two business days notice advising of amendments to Schedule 3 of the access arrangement proposal is insufficient.

The AER notes that amendment 14.4 requires Jemena to seek the AER's approval to amend terms and conditions in accordance with the processes set out in the NGR. The AER does not consider that the wording 'deemed to have approved' in clause 1.4 of the access arrangement proposal is consistent with the processes outlined in the NGR for varying an access arrangement. The process initiated by an application under r. 65 of the NGR allows non-material amendments to be reviewed in an expedited fashion.¹⁵¹⁹ The AER recognises from submissions that even where variations are non-material users may require more than two business days to give effect to such variations in their agreements.

Where changes are of a material nature, the application for variation of the applicable access arrangement will be examined under Part 8 Division 10 of the NGR. This provides for a public process including a call for submissions. Interested parties can outline their specific concerns about amendments the subject of an application for

1516 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009.

1517 EnergyAustralia, *Submission to the AER*, November 2009, p. 6.

1518 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009.

1519 NGR, r. 66(1) and r. 66(2).

variation of the applicable access arrangement ('proposed amendment'). Parties can make submissions regarding the period of time it will take them to implement a proposed amendment into contracts that Jemena has already executed with third parties.

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 14.6: amend the access arrangement proposal to delete clause 1.4(b) of Schedule 3 and replace it with the following:

the User agrees that such amendments will vary the terms of this Agreement effective 10 Business Days from the date of the written notice unless the User can demonstrate to the Service Providers' reasonable satisfaction that it is not able to comply with this timeframe in which case the Service Provider will grant a reasonable extension.

Amendment 14.7: amend the access arrangement proposal to delete in clause 1.4 of Schedule 3 the following:

- 'or is deemed to have approved'
- '(or a replacement of the Reference Services Agreement)'

Further, clauses 10.1(a)(ii), 14.9 and 24.2(a)(ii)(B) as well as annexures 3¹⁵²⁰, 4¹⁵²¹ and 6¹⁵²² in Schedule 3 of the access arrangement proposal suggests that Jemena may unilaterally amend the agreement. The AER does not consider this appropriate. Unilateral amendments fail to take account of the variation mechanism set out in Part 8 of Division 10 of the NGR as referred to above.¹⁵²³

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 14.8: amend the access arrangement proposal to delete the words 'by the Service Provider' in clauses 10.1(a)(ii), 14.9(a) and 24.2(a)(ii)(B) of Schedule 3 and replace them with the words 'in accordance with the Variation Process outlined in Division 10 of Part 8 of the NGR.'

Amendment 14.9: amend the access arrangement proposal to delete the words 'by the Service Provider to the extent necessary to take account of the changed circumstances' in clauses 1(c) of annexure 3 and 1(c) of annexure 4 of Schedule 3 and replace them with the words 'in accordance with the Variation Process outlined in Division 10 of Part 8 of the NGR'.

Amendment 14.10: amend the access arrangement proposal to delete the last sentence of annexure 6 of Schedule 3 and replace it with the following:

1520 Jemena, *Access arrangement proposal*, August 2009, schedule 3, Annexure 3, clause 1.(c).

1521 Jemena, *Access arrangement proposal*, August 2009, schedule 3, Annexure 4, clause 1.(c).

1522 Jemena, *Access arrangement proposal*, August 2009, schedule 3, Annexure 6, p. 109.

1523 NGR, r. 65.

The Service Provider may amend this Annexure at any time in accordance with the Variation Process outlined in Division 10 of Part 8 of the NGR and will notify Users of any such amendments and publish the updated Annexure on its website.

The AER notes that Jemena's definition of 'Reference Tariff Schedule' states that the reference tariff schedule may be 'amended from time to time by the Service Provider in accordance with the terms of the Access Arrangement'. For the sake of clarity and avoidance of doubt, the AER considers that the words 'Service Provider' should be deleted as outlined below.

Amendment 14.11: amend the access arrangement proposal to delete the words 'by the Service Provider' in the definition of 'Reference Tariff Schedule' in clause 1.1 of Schedule 3.

Amendment 14.12: amend the access arrangement proposal to include the following in clause 1.1 of Schedule 3:

Variation Process means the mechanisms and timelines provided for or referred to in Part 8 of Division 10 of the NGR;

14.2.6 Decreases in chargeable demand

Jemena's proposal

Jemena sets out the requirements for decreases in chargeable demand in clause 4.7 of Schedule 3 of the access arrangement proposal.

Submissions

AGL submits that clause 4.7 of Schedule 3 of the access arrangement proposal should reflect the wording and intent of clause 3.3(h). This permits for the reassignment of a tariff class where the user demonstrates that the occupant of a premise has changed. It submits that clause 4.7 is unfair as new customers have to wait 12 months for a possible reduction in chargeable demand and that they are penalised for a previous occupant's usage patterns. AGL also submits that a reduction in chargeable demand should apply from the requested month after which the ninth highest gas withdrawal applies from the demand reset date. If the reduction in chargeable demand has been under-estimated, it will quickly be reset to the correct level.¹⁵²⁴

EnergyAustralia similarly submits that chargeable demand and MDQ should go up and down together, set at the ninth highest withdrawal in any one day in the preceding 12 months. It also submits that a customer may be overcharged because chargeable demand can only be reduced by 10 per cent or more and the reduction will only become effective after 12 months.¹⁵²⁵

1524 AGL, *Submission to the AER*, appendix, 10 November 2009, pp. 4–5.

1525 EnergyAustralia, *Submission to the AER*, November 2009, p. 7.

EnergyAustralia also expresses concern that the decision to accept a reduction in the chargeable demand appears to be at Jemena's discretion and that no justification of refusal is required.¹⁵²⁶ EnergyAdvice raises similar concerns.¹⁵²⁷

Qenos submits that chargeable demand should be based on the ninth highest MDQ over the last 12 months to take into account decreases as well as increases in gas demand.¹⁵²⁸

Clause 4.7 of Schedule 3 of the access arrangement proposal was also discussed at the Round table discussion on non-tariff issues.¹⁵²⁹ Jemena clarified that chargeable demand focuses on users' characteristics.¹⁵³⁰ Jemena noted that if a user does not have a permanent, material reduction, then they should not obtain a reduction in chargeable demand.¹⁵³¹ While this may mean that a user may be liable for payment of MDQ in excess of the amount taken by them, this will reduce other users' charges in the long term. Also, reducing large users' MDQ by a small amount does not have a meaningful impact on the charge payable by them, but would lead to a significant number of transactions and increased administrative costs.

With regard to the change of occupant at specific premises raised by EnergyAustralia (see above), Jemena submitted that there are two possible scenarios:

- walk-in-walk-out: the new occupant takes over the operation of the on-going business. No change in demand would be expected and historical data would reflect anticipated usage
- closing down and re-activation: a decommissioning would be associated with this.¹⁵³²

Where a customer experiences decreased demand because they have changed or decommissioned an appliance, their decreased usage can only be accommodated through a decommissioning.¹⁵³³ However, Jemena submitted that only large volume customers are affected by this and it may not be a practical issue. Attendees at the Round table discussion on non-tariff issues appeared to agree that this is more likely to be a theoretical problem.¹⁵³⁴

Jemena submitted that the system is comparable to that currently in place but expressed differently.¹⁵³⁵ However, in response to comments made at the Round table discussion on non-tariff issues, Jemena provided the AER with an alternate proposal

1526 EnergyAustralia, *Submission to the AER*, November 2009, p. 7.

1527 EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 7.

1528 Qenos, *Submissions on Jemena access arrangement proposal 2010–2015*, 11 November 2009, p. 2.

1529 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 9–12.

1530 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 9–10.

1531 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, p. 10.

1532 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 10–11.

1533 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, p. 11.

1534 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, p. 11.

1535 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, p. 11.

on the waiting time for reductions in chargeable demand. In relation to reductions in chargeable demand, Jemena proposes replacing the 12 month monitoring period with an immediate reduction in chargeable demand based on actual utilisation in the 12 months prior to the reduction request.¹⁵³⁶

In summary, after the Round table discussion on non-tariff issues Jemena proposes that:

- a request for a reduction must be for a quantity equal to the ninth highest withdrawal at that delivery point in the 12 months immediately prior to the date of the reduction request
- chargeable demand will be reduced at the start of the month immediately following the month of receipt of a complete reduction request.¹⁵³⁷

AER's analysis and considerations

The AER does not consider that an amendment of clause 4.7 of Schedule 3 of the access arrangement proposal is required to address concerns regarding the change of occupants at premises. However, the time limits set out in clause 4.7 of Schedule 3 of the access arrangement proposal do warrant amendment. These set out when a user can request a decrease of their chargeable demand:

- the user must not have requested a reduction in the 12 months after last changing their demand charge¹⁵³⁸
- Jemena must not have rejected an application by the user for a reduction of chargeable demand in the six months preceding the date of the reduction request¹⁵³⁹
- Jemena has not accepted a request to reduce chargeable demand in the 12 months prior to the current reduction request.¹⁵⁴⁰

Relevantly, clause 4.7(c) of Schedule 3 of the access arrangement proposal provides that Jemena will approve or reject an application to decrease chargeable demand within one month of its receipt.¹⁵⁴¹

The practical effect of this clause is that a user will have to wait at least 12 months before they are able to obtain a reduction in chargeable demand. A number of submissions suggest that this is unduly long.

1536 Jemena, *Clarification following the round-table discussion of Jemena's access arrangement proposal (2010–2015) terms and conditions*, 18 December 2009, p. 4.

1537 Jemena, *Clarification following the round-table discussion of Jemena's access arrangement proposal (2010–2015) terms and conditions*, 18 December 2009.

1538 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 4.7(b)(ii).

1539 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 4.7(b)(iii).

1540 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 4.7(b)(iv).

1541 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 4.7(c).

The AER notes Jemena's submission, that the arrangement currently in place is comparable to that in the access arrangement proposal.¹⁵⁴² The AER also notes Jemena's alternative proposal in relation to reductions in chargeable demand.¹⁵⁴³ The AER considers that Jemena's alternative proposal in response to comments at the Round table discussion on non-tariff issues is appropriate.

Furthermore, in order to assist users in understanding the basis for acceptance or rejection of their applications for decreases in chargeable demand, clause 4.7(c) of Schedule 3 of the access arrangement proposal should be amended to state that Jemena will provide written reasons for any rejections. The AER considers that for example plant closures or other temporary operating arrangements within a six month period are reasonable operational reasons for a rejection.

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 14.13: amend the access arrangement proposal to:

- include in clause 4.7(b)(iv) of Schedule 3 the words 'for the relevant Delivery Point' after the words 'Chargeable Demand'
- include in clause 4.7(c) of Schedule 3 the words 'provide their reasons in writing and' after the words 'The Service Provider will'
- delete the word 'following' in clause 4.7(e)(ii) of Schedule 3 and replace it with the word 'preceding'
- delete clause 4.7(e)(iii) of Schedule 3
- delete clause 4.7(f) of Schedule 3 and replace it with the following:

A reduction in Chargeable Demand pursuant to clause 4.7(e) will take effect from the first day of the calendar month immediately following the date of receipt of the complete Reduction Request.

- delete the words 'either' and 'or 4.7(e)(iii)' from clause 4.7(g)(i) of Schedule 3.

14.2.7 Gas balancing under an arrangement approved by the Service Provider

Jemena's proposal

Jemena sets out the requirements for gas balancing in clause 7.4 of Schedule 3 of the access arrangement proposal.

Submissions

EnergyAustralia requests clarification of what 'service agreements' means in clause 7.4(b)(i) and submits that if a balancing mechanism is provided by the Australian

1542 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, p. 11.

1543 Jemena, *Clarification following the round-table discussion of Jemena's access arrangement proposal (2010–2015) terms and conditions*, 18 December 2009, pp. 2–4.

Energy Market Operator (AEMO) or a relevant industry scheme then Jemena should not have what EnergyAustralia submits amounts to a power of veto over that scheme. EnergyAustralia submits that clause 7.4(b)(ii) should be amended to require Jemena to approve such a scheme.¹⁵⁴⁴

Clause 7.4 of Schedule 3 of the access arrangement proposal was discussed at the Round table discussion on non-tariff issues. Jemena submitted that ‘service agreements’ refers to a contract under which Jemena provides a transportation service to a user.¹⁵⁴⁵

Jemena outlined at the Round table discussion on non-tariff issues that it is responsible for the safe management of the network, including balancing. Jemena stated that clause 7.4 of Schedule 3 of the access arrangement proposal provides a mechanism in the event that the STTM should fail to operate as anticipated.¹⁵⁴⁶

AER’s analysis and considerations

The AER considers that following the Round table discussion on non-tariff issues an amendment of clause 7.4 is required to assist users to understand the intent of the clause and the circumstances in which it might operate.

The AER does not consider it appropriate that the access arrangement states that Jemena should be able to decide whether or not to apply a gas balancing mechanism that has the force of law. Where a mechanism has the force of law, Jemena cannot nominate whether to implement the mechanism or not.

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 14.14: amend the access arrangement proposal to delete clause 7.4 of Schedule 3 and replace it with the following:

- (a) The AEMO, or a relevant industry scheme, may provide a mechanism for the Gas Balancing of Network Sections. The Service Provider must implement any and all mechanisms as required by law.
- (b) The Service Provider may implement a mechanism other than that referred to in clause 7.4(a) if it reasonably considers that the mechanism:
 - (i) meets the operational requirements of the Network Section; and
 - (ii) is not contrary to a provision of this Access Arrangement.
- (c) The Service Provider must notify all Network Users:
 - (i) if the Service Provider intends to implement a mechanism under clauses 7.4(a) or 7.4(b), in which case the notice will include:

1544 EnergyAustralia, *Submission to the AER*, November 2009, p. 8.

1545 AER, *Minutes of round table discussion on terms and conditions*, 27 November 2009, p. 12.

1546 AER, *Minutes of round table discussion on terms and conditions*, 27 November 2009, p. 13.

- (A) the date on which the mechanism referred to in clause 7.4(a) or 7.4(b) takes effect for the purpose of this agreement; and
 - (B) any technical conditions or arrangements reasonably required by the Service Provider to facilitate transition to a mechanism.
- (ii) if the Service Provider does not intend to implement a mechanism other than that referred to in clause 7.4(a).
- (d) Where a mechanism is implemented by the Service Provider and notified to the Network User in accordance with clauses 7.4(a) and 7.4(c) and the mechanism is subsequently withdrawn, the Service Provider will notify all Network Users that it has withdrawn the mechanism.
 - (e) If the Service Provider implements a mechanism under clause 7.4(a):
 - (i) the mechanism under clause 7.4(a) will operate to govern the Gas Balancing of Network Sections;
 - (ii) neither Gas Balancing Annexure will apply;
 - (iii) the User must comply with the requirements of the mechanism referred to in clause 7.4(a);
 - (iv) the User and the Service Provider must comply with clauses 7.5, 7.6 and 7.7 below.

Amendment 14.15: amend the access arrangement proposal and the access arrangement information to reflect amendment 14.14.

14.2.8 User to provide Jemena with forecast of withdrawals

Jemena's proposal

Clause 7.5 of Schedule 3 of the access arrangement proposal requires users to provide information about forecasts of withdrawals. That is to say, the forecast aggregate quantity of gas which the user intends to withdraw from the network on the particular day.¹⁵⁴⁷

Submissions

EnergyAustralia submits that:

- clause 7.5(c) of Schedule 3 of the access arrangement proposal contains an incorrect reference to clause 7.5(a)
- the timetable set out in clauses 7.5(c) to 7.5(f) of Schedule 3 of the access arrangement proposal should only apply if an industry scheme does not set a timetable for forecast withdrawals

¹⁵⁴⁷ Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 7.5(e).

- the treatment of ‘matched allocation’ is not mentioned in the access arrangement proposal.¹⁵⁴⁸

AER’s analysis and considerations

Clause 7.5 of Schedule 3 of the access arrangement proposal sets out a timetable that Jemena proposes to apply in those instances where users are to provide it with forecasts of their withdrawals. In determining whether the proposed clause is appropriate, the AER has had regard to the national gas objective. The AER considers that clause 7.5 of Schedule 3 of the access arrangement proposal should be amended to clarify that clauses 7.5(c)–7.5(f) will only apply if an applicable industry scheme does not set out a timetable.

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 14.16: amend the access arrangement proposal to include in clause 7.5(a) of Schedule 3 the following words after ‘clause 7.4(a)’:

And clauses 7.5(c)–(f) only apply insofar as the AEMO or a relevant industry scheme does not set out a timetable.

Amendment 14.17: amend the access arrangement proposal to delete the reference to ‘clause 7.5(a)’ in clause 7.5(c) of Schedule 3 and replace it with ‘clause 7.5(b)’.

14.2.9 Typographical errors

In reviewing the access arrangement proposal and submissions, the AER has identified the following typographical errors and requires the following amendments:¹⁵⁴⁹

Amendment 14.18: amend the access arrangement proposal to delete the words ‘and Indemnity’ from the heading of clause 9.1 of Schedule 3.

Amendment 14.19: amend the access arrangement proposal to delete the words ‘1 July 2009’ in clause 11.4(c)(v) of Schedule 3 and replace them with the words ‘1 July 2010’.

14.2.10 Basic metering equipment downgrade at existing delivery station

Jemena’s proposal

Jemena outlines basic metering equipment downgrades at existing delivery stations in clause 15.6 of Schedule 3 of the access arrangement proposal.

Submissions

EnergyAustralia submits that Jemena’s ability to downgrade basic metering equipment at its own discretion should be subject to any future change in load or pattern of usage by the user’s customer. EnergyAustralia also submits that if a users’

1548 EnergyAustralia, *Submission to the AER*, November 2009, p. 8.

1549 In relation to the second, see EnergyAustralia, *Submission to the AER*, November 2009, p. 9.

customer intends to increase load and/or change their usage pattern then Jemena should not be able to downgrade the basic metering equipment.¹⁵⁵⁰

AER's analysis and considerations

The AER considers that Jemena's discretion to downgrade basic metering equipment should be subject to a requirement to consult with the user to determine whether the user's customer is intending to increase load and/or change their usage pattern.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.20: amend the access arrangement proposal to include after the words 'at its own discretion' in clause 15.6(a) of Schedule 3, the following:

subject to the requirement that it must consult with the User to determine whether the User's customer intends to increase load and/or change their pattern of usage such that a downgrade is no longer required.

14.2.11 Safe access to measuring equipment

Jemena's proposal

Clause 16.1 of Schedule 3 of the access arrangement proposal outlines the need for safe access to measuring equipment. In particular, it requires the user to provide Jemena with safe access to delivery stations and metering equipment and to ensure that areas surrounding measuring equipment are safe. It also permits Jemena to move or install additional measuring equipment at the user's cost if the area surrounding the measuring equipment becomes unsafe for the network.

Submissions

EnergyAustralia submits that clause 16.1 of Schedule 3 of the access arrangement proposal fails to provide a notification process and reasonable timeframe for the rectification of concerns.¹⁵⁵¹

AGL submits that the clause should state the conditions that would make the surrounding area unsuitable.¹⁵⁵²

AER's analysis and considerations

The AER considers that clause 16.1(c) of Schedule 3 of the access arrangement proposal should be amended to specify what would make an area unsuitable for the operation of measuring equipment. The clause states that measuring equipment can be altered, moved or installed if an area surrounding the measuring equipment becomes unsuitable for the safe and continuous operation of the network.

The AER also considers that including a notification and reasonable timeframe provides certainty for all parties and is in accordance with the national gas objective.¹⁵⁵³

1550 EnergyAustralia, *Submission to the AER*, November 2009, p. 11.

1551 EnergyAustralia, *Submission to the AER*, November 2009, p. 9.

1552 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 13.

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 14.21: amend the access arrangement proposal to:

- include the following words after ‘Network at the User’s cost.’ in clause 16.1(c) of Schedule 3:

An area will be considered unsuitable if it cannot be accessed without risk of personal injury or is of a type where it is reasonably foreseeable that measuring equipment will sustain damage.

- include a new clause 16.1(d) in Schedule 3 to state:

Where the Service Provider considers that clauses 16.1(b) or 16.1(c) may apply, it will provide the User with written notice stating the reasons why it considers clauses 16.1(b) or 16.1(c) apply and provide the User with a reasonable period of time within which to remedy the matter before taking action under clauses 16.1(b) or 16.1(c).

14.2.12 Consequence of no access

Jemena’s proposal

Clause 16.3 of Schedule 3 of the access arrangement proposal outlines the consequences of not being able to access a delivery point. It provides that Jemena may estimate the quantity of gas delivered, reduce or interrupt the service, or replicate the measuring equipment at another location (at the user’s cost).

Submissions

AGL submits that:

- clause 16.3(a) of Schedule 3 of the access arrangement proposal should—similar to clause 16.7(b) of Schedule 3 of the access arrangement proposal—state the basis on which the quantity of gas delivered will be estimated
- the reference to one business day in clause 16.3(c) of Schedule 3 of the access arrangement proposal should be changed to refer to five business days except where safety issues are identified.¹⁵⁵⁴

AER’s analysis and considerations

The AER considers that clause 16.3(a) of Schedule 3 of the access arrangement proposal should be amended to specify the basis on which the quantity of gas will be estimated to provide certainty for users. The AER also considers that notice of one business day in clause 16.3(c) is too short for users to respond and incur reasonable costs for replicating measuring equipment except in circumstances relating to safety issues requiring immediate action.

1553 NGL, s. 23.

1554 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 13.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.22: amend the access arrangement proposal to delete clause 16.3(a) of Schedule 3 and replace it with the following:

estimate the Quantity of Gas delivered to that Delivery Point, by having regard to Gas consumption patterns for that Delivery Point, and render an invoice based on such an estimate; and/or

Amendment 14.23: amend the access arrangement proposal to delete clause 16.3(c) of Schedule 3 and replace it with the following:

after giving the User 1 Business Day's written notice for safety issues, and 5 Business Day's notice for all other issues, replicate at a location accessible to the Service Provider, and at the User's reasonable cost, the Measuring Equipment at the Delivery Point.

14.2.13 Right to alter measuring equipment

Jemena's proposal

Clause 16.8 of Schedule 3 of the access arrangement proposal outlines Jemena's right to alter measuring equipment. It provides that Jemena may at its discretion and at the user's cost install flow control mechanisms on measuring equipment to control the amount of gas withdrawn and alter or make additions to the measuring equipment where this is required for the network's safe and reliable operation or protection or 'to ensure that User's compliance with the provisions of this Agreement'.

Submissions

EnergyAustralia submits that clause 16.8 of Schedule 3 of the access arrangement proposal is a catch all clause which provides Jemena with the ability, at its absolute discretion and at the user's costs, to install control flow mechanisms and to alter or make additions to measuring equipment. EnergyAustralia submits that this should be justified by Jemena and where it is justified, provide for notification periods, cost estimates and processes for rectification.¹⁵⁵⁵

AER's analysis and considerations

The AER considers that Jemena's discretion in relation to installing flow control mechanisms or altering or making additions to the measuring equipment installed at any delivery point should be limited to where it is needed to ensure safe and reliable operation of, and to protect, the network.

The AER does not consider it appropriate to use the right to alter measuring equipment to ensure that a user complies with their obligations under Schedule 3 of the access arrangement proposal, and particularly at the user's cost, without the user being advised of Jemena's reasoning and, where the safe and reliable operation or protection of the network permits, giving the user an opportunity to rectify the matter.

1555 EnergyAustralia, *Submission to the AER*, November 2009, p. 10.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.24: amend the access arrangement proposal to include at the end of clause 16.8 in Schedule 3 the following:

Where the safe and reliable operation or the protection of the Network does not necessitate immediate action, the Service Provider will notify the User of any issue coming within the scope of clause 16.8 and outline its concern and state a reasonable period of time within which the User may rectify the issue before the Service Provider will take action at the User's cost.

14.2.14 Overcharging and undercharging

Jemena's proposal

Clause 22.8(c) of Schedule 3 of the access arrangement proposal states that a service provider or user cannot claim any amount overcharged or undercharged after two calendar years.

Submissions

Origin and AGL submit that the two year limitation period proposed in clause 22.8(c) of Schedule 3 of the access arrangement proposal is not reasonable and inconsistent with requirements in the Gas Network Code and state regulations.¹⁵⁵⁶ EnergyAustralia submits that clause 22.8 is inconsistent with the Gas Network Code for small retail customers and should be redrafted to ensure consistency.¹⁵⁵⁷ Origin considers that the two year limit is unnecessary given the caveat in clause 22.8(d) in relation to inconsistency with the network code. Origin submits that the two year limit is unreasonable as it may require a user to pass on amounts to the service provider that the user could not recover from a customer because of state regulations.¹⁵⁵⁸

AER's analysis and considerations

The AER considers that the two year limit for claims for undercharging or overcharging is not in accordance with the national gas objective.¹⁵⁵⁹ The AER notes that:

- the Gas Network Code states that retailers may:
 - recover overcharges from the network operator where the error resulted from a data error¹⁵⁶⁰
 - be required to pay undercharged amounts to the network operator resulting from a data error in respect of a period that is less than 12 months before the date of notification of the undercharge.¹⁵⁶¹

1556 Origin, *Jemena gas networks access arrangement proposal*, 10 November 2009, p. 4 (Origin, *Submission to the AER*, 10 November 2009) and AGL, *Submission to the AER*, 10 November 2009, appendix, p. 18.

1557 EnergyAustralia, *Submission to the AER*, November 2009, p. 11.

1558 Origin, *Submission to the AER*, 10 November 2009, p. 4.

1559 NGL, s. 23.

1560 Gas Network Code, s. 12.1.

- the Gas Supply Regulation states that small retail customers may:
 - recover overcharges from a supplier¹⁵⁶²
 - be required to pay undercharged amounts to the supplier in respect of a period that is less than 12 months before the date of notification of the undercharge.¹⁵⁶³

The AER considers that the Gas Network Code and the Gas Supply Regulation must be observed. That said, Jemena should only be able to recover undercharged amounts if the user can pass the costs through to their customer. If the user cannot pass on the costs to its customers, Jemena cannot seek to pass these amounts on.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.25: amend the access arrangement proposal to include a new clause 22.8(aa) of Schedule 3 that states:

Where the Service Provider has undercharged or not charged a User, the User is not obliged to pay any additional charges to the extent that the User is precluded by law from recovering those charges from its customers. Where the Service Provider has overcharged a User, the User may seek to recover additional charges to the extent permitted by law and pass those charges through to its customers.

14.2.15 Scheduled interruptions

Jemena's proposal

Clause 25.2(c)(i) of Schedule 3 of the access arrangement proposal provides for either the user or customer to be notified of a scheduled interruption.

Submissions

EnergyAustralia submits that clause 25.2(c)(i) of Schedule 3 of the access arrangement proposal differs from existing arrangements and should be rejected. Currently both the user and the customer are notified of scheduled interruptions. It also submits that clause 25.2(d) of Schedule 3 of the access arrangement proposal should be deleted as the requirement to notify the user and the customer should be retained.

AER's analysis and considerations

The AER considers that the arrangements under the earlier access arrangement should be maintained, so that Jemena is required to notify both the user and the customer of scheduled disruptions. This will ensure that all affected parties will be directly informed in an efficient manner.

1561 Gas Network Code, s. 12.2.

1562 Gas Supply Regulation, regulation 26.

1563 Gas Supply Regulation, regulation 27.

However, the AER does not consider that clause 25.2(d) of Schedule 3 of the access arrangement proposal should be deleted as this places the onus on Jemena to ensure that gas will cease to flow in accordance with Jemena's direction.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.26: amend the access arrangement proposal to delete the word 'or' where it first appears in clause 25.2(c)(i) of Schedule 3 and replace it with the word 'and'.

14.2.16 Failure to pay

Jemena's proposal

Clause 27.3 of Schedule 3 of the access arrangement proposal sets out the default period considered by Jemena before it takes action if a user defaults in payment of any monies under Schedule 3 of the access arrangement proposal.

Submissions

AGL submits that the days in clause 27.3 of Schedule 3 of the access arrangement proposal be either defined as business days or calendar days within the clause. AGL submits that clause 27.3 should exclude any amounts that are in dispute under clause 22.6 of Schedule 3 of the access arrangement proposal.¹⁵⁶⁴

AER's analysis and considerations

The AER notes AGL's concern regarding the need to have a clear statement as to how the period of seven days referred to in clause 27.3 of Schedule 3 of the access arrangement proposal should be calculated. However, the AER notes that clause 1.1 of Schedule 3 of the access arrangement proposal defines 'Day' as referred to in clause 27.3 to mean a period of 24 consecutive hours. Because this means that calendar days apply, the AER does not consider it necessary to amend clause 27.3 to clarify how the seven day period is calculated.

Notwithstanding this, the AER considers that payments in dispute should not be included as payments in default for the operation of clause 27.3 of Schedule 3 of the access arrangement proposal and will provide greater certainty to the parties.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.27: amend the access arrangement proposal to delete clause 27.3 of Schedule 3 and replace it with the following:

If the User defaults in payment of any moneys payable under this Agreement, excluding payments disputed under clause 26.2, for a period of 7 Days after notification of the default then the Service Provider may, at the Service Provider's sole discretion, either terminate this Agreement or cease to provide Service to any one or more Delivery Points by notice in writing, such

¹⁵⁶⁴ AGL, *Submission to the AER*, 10 November 2009, appendix, p. 24.

termination or cessation to take effect 48 Hours after delivery of the notice and/or may call on the Security.

14.2.17 Liability and indemnity clauses

Jemena's proposal

Schedule 3 of the access arrangement proposal contains a number of specific liability and indemnity provisions. Clause 28 of Schedule 3 of the access arrangement proposal provides an additional general liability provision.

Submissions

EnergyAustralia submits that there are numerous liability and indemnity provisions in Schedule 3 of the access arrangement proposal that are of concern to it.¹⁵⁶⁵ It identifies 14 separate clauses in Schedule 3 of the access arrangement proposal which outline specific events or circumstances for which Jemena's liability is excluded and it is indemnified by the user.¹⁵⁶⁶ The clauses identified are:

- revocation of authorisation of overruns (clause 5.6(b))
- liability for damages arising from unauthorised overruns (clause 6.2)
- right to commingle (clause 9.2(b))
- responsibility for gas (clause 9.4(b))
- out of specification of gas (clause 10.1(e))
- cessation of delivery of out of specification gas or failure of user to comply with direction to cease delivery of out of specification gas (clause 10.3(c) and 10.3(d))
- failure of user to comply with gas testing obligations (clause 10.10(i))
- delivery into a network receipt point that does not comply with gas pressure specifications (clause 14.9(b))
- the service provider decommissioning or disconnecting at the direction of the User (clause 15.12)
- the installation, operation, maintenance or removal by the user (or its agent) of any measuring equipment, meter reading or communications facilities or connections installed at a delivery point (clause 18.5)
- the service provider suspends delivery of gas at the user's request or at the service provider's discretion.
- load shedding by the service provider in good faith in accordance with the principles of clause 25.4 (clause 25.4(k))
- the service provider interrupting gas delivery or load shedding for any user or customer in accordance with the principles of clause 25 (clause 25.7(a)–(b))

1565 EnergyAustralia, *Submission to the AER*, November 2009, pp. 13–21.

1566 EnergyAustralia, *Submission to the AER*, November 2009, pp. 14–15.

- failure of the user or any of its customers to comply with the load shedding or supply interruption requirements of clause 25 (clause 25.7(c)(ii)).¹⁵⁶⁷

Scope of liability

EnergyAustralia submits that the scope of Jemena's liability exclusion and indemnities goes too far. Users indemnify Jemena against all liability for damages or claims incurred by Jemena, even where events or circumstances giving rise to claims are outside the user's control.¹⁵⁶⁸ Even where the user's gas is the problem or where the user has caused the problem, it is unreasonable for Jemena to impose full and unlimited indemnity liability on the user for all direct and consequential economic loss that might conceivably result.¹⁵⁶⁹

EnergyAustralia submits that a user should only be exposed to liability for its breach of Schedule 3 of the access arrangement proposal or negligence with reasonable limitations on the scope of their liability. Further, the indemnity liability in the specific provisions should not apply for things not caused by the user, the user's customers or the delivery of the user's gas and should be made subject to the same reasonable limitations that apply to Jemena's indemnity in clause 28 of Schedule 3 of the access arrangement proposal.¹⁵⁷⁰

EnergyAustralia submits that its concerns could be accommodated by making each of the 14 specific provisions identified by it subject to the general exclusions and limitations in clause 28 of Schedule 3 of the access arrangement proposal and deleting those words in clause 28 which effectively seek to exclude the 14 specific provisions from the operation of clause 28.¹⁵⁷¹

At the Round table discussion on non-tariff issues, Jemena stated that the most efficient way to manage risk is to assign it to the party best placed to manage it. Jemena stated that it does not have a relationship with its users' customers and considers users better placed to manage risks arising further along the supply chain—that is, between its customers and third parties.¹⁵⁷² The AER understands from the Round table discussion on non-tariff issues that Jemena is not proposing to introduce a term or condition which is significantly different from current arrangements.¹⁵⁷³

Jemena noted that some events can be caused by a multiple number of users, for example, out of specification gas being brought into the network. If one or a number of users bring out of specification gas into the network, Jemena asked how users propose the risk should be dealt with. Because gas comes in the pipeline, it is not possible to trace who introduced the gas into the pipeline. If the network operator accepts the risk, the network operator effectively becomes the insurer for the market. This comes at a cost. If it is the users' gas and there are multiple users, all of these parties are liable. Jemena notes that clause 28.6(b) imposes liability on Jemena for

1567 EnergyAustralia, *Submission to the AER*, November 2009, pp. 14–15.

1568 EnergyAustralia, *Submission to the AER*, November 2009, p. 16.

1569 EnergyAustralia, *Submission to the AER*, November 2009, p. 17.

1570 EnergyAustralia, *Submission to the AER*, November 2009, pp. 17–18.

1571 EnergyAustralia, *Submission to the AER*, November 2009, p. 16.

1572 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, p. 16.

1573 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 16, 19–20.

delivery of out of specification gas caused by the negligence or wilful default of the service provider.¹⁵⁷⁴

Damages cap

EnergyAustralia submits that it is unreasonable for Jemena to impose a cap on its liability (via clauses 28.4 and 28.5 of Schedule 3 of the access arrangement proposal). No similar direct damages cap and consequential damage exclusion applies to users. They are left exposed to a wide range of circumstances including virtually any breach of the agreement or negligence by the user.¹⁵⁷⁵

AGL also expresses concerns regarding the scope of the proposed liability and indemnity provisions. AGL identifies clause 15.12 and clause 24.3 of Schedule 3 of the access arrangement proposal as being of particular concern. These clauses are new and indemnify Jemena from any liability (including damages arising from Jemena's negligence) regarding its actions in decommissioning or temporarily disconnecting or reconnecting a user.¹⁵⁷⁶ AGL submits that Jemena should be liable for its negligence and acts or omissions that cause damage.¹⁵⁷⁷

Meter data service

AGL submits that if users are required to use Jemena's meter data service, Jemena should be liable for its errors. It submits that clauses 17.5 and 17.6 of Schedule 3 of the access arrangement proposal should be deleted or amended to place liability on Jemena regarding the accuracy of the meter data service.¹⁵⁷⁸

EnergyAustralia submits that as owner of the measuring equipment Jemena should be prepared to make some warranties for the accuracy of the equipment rather than to disclaim accuracy.¹⁵⁷⁹

AER's analysis and considerations

The AER notes that the liability provisions contained in the earlier access arrangement revision proposal were the subject of detailed analysis by the IPART and its consultants, the Allen Consulting Group.¹⁵⁸⁰ EnergyAustralia made detailed submissions outlining its concerns relating to the liability provisions then. In particular, it was concerned that the earlier access revision proposal would squeeze users between the unreasonable liability provisions in the access arrangement and the rights conferred on consumers by various statutory provisions. EnergyAustralia submitted that all liability and indemnity provisions in the earlier access arrangement revision proposal, other than those contained in the general liability clauses of

1574 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 28.6(b), p. 79.

1575 EnergyAustralia, *Submission to the AER*, November 2009, p. 19.

1576 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 13.

1577 AGL, *Submission to the AER*, 10 November 2009, appendix, pp. 13, 19.

1578 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 14.

1579 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 10.

1580 IPART, *Revised access arrangements for AGL Gas Networks, Final Decision*, April 2005, pp. 165–167 and The Allen Consulting Group, *Revisions to AGLGN's access arrangement*, 28 October 2004, pp. 77–95.

schedule 2A (clauses 54–60), should be deleted. It also submitted proposed amendments to the general liability provisions.¹⁵⁸¹

The Allen Consulting Group¹⁵⁸² and ultimately the IPART considered that the liability and indemnity terms and conditions, except for an amendment relating to the gas swap service, were reasonable and therefore satisfied clause 3.6 of the Code.¹⁵⁸³

The AER has reviewed the clauses identified in EnergyAustralia's and AGL's submissions and considered their submissions including further comments made at the Round table discussion on non-tariff issues. The AER also notes that except for gas swap services, the IPART considered the proposed liability terms to be reasonable under the Code.¹⁵⁸⁴

The proposed liability terms set out in Schedule 3 of the access arrangement proposal are similar to the terms in the access arrangement in the earlier access arrangement period approved by the IPART. The AER considers that most of the specific liability and indemnity provisions identified by EnergyAustralia and the provisions of clause 28 are appropriate when viewed in the context of assigning risk to the party best able to manage that risk.

However, the AER has identified several clauses that remove Jemena's liability in situations where Jemena has the potential to manage the risk through its own conduct. In particular:

- clause 15.12(b) of Schedule 3 of the access arrangement proposal dealing with liability for disconnection and clause 24.3(b) of Schedule 3 of the access arrangement proposal dealing with liability for suspension of a service, remove Jemena's liability and impose indemnity liability on the user for Jemena's negligent conduct. This is clearly beyond the users' control
- in relation to clauses 17.5 and 17.6 of Schedule 3 of the access arrangement proposal the AER considers that these clauses are unreasonable because they remove all liability from Jemena in relation to the accuracy of meter data and the condition or fitness for purpose of the measuring equipment. The AER considers that Jemena is in the best position to be able to manage the risk and so should accept liability for its actions in relation to the service.

The AER considers that the required amendments are in accordance with the national gas objective¹⁵⁸⁵ and will promote the efficient investment in, and efficient operation and use of, national gas services for the long term interests of consumers of natural

1581 EnergyAustralia, *AGLGN December 2003 access arrangement*, 20 April 2004, viewed 2 December 2009, <<http://www.ipart.nsw.gov.au/files/Submission%20-%20EnergyAustralia%20-%20AGLGN%20revision%20to%20access%20arrangement%20-%20Nick%20Saphin.pdf>>, attachment E.

1582 The Allen Consulting Group, *Revisions to AGLGN's access arrangement*, 28 October 2004, pp. 77–85.

1583 IPART, *Revised access arrangements for AGL Gas Networks, Final Decision*, April 2005, pp. 165–167.

1584 IPART, *Revised access arrangements for AGL Gas Networks, Final Decision*, April 2005, pp. 165–167.

1585 NGR, r. 100.

gas with respect to price, quality, safety, reliability and security of supply of natural gas.¹⁵⁸⁶

Before the access arrangement proposal can be accepted, Jemena must make the following amendments:

Amendment 14.28: amend the access arrangement proposal to delete clauses 15.12(b) and 24.3(b) of Schedule 3.

Amendment 14.29: amend the access arrangement proposal to delete clauses 17.5 and 17.6 of Schedule 3.

14.2.18 Definitions

Jemena's proposal

Jemena defines a demand customer list in clause 1.1 as a list in electronic form or such other form determined by the service provider which sets out various items for each demand customer delivery point.

Submissions

AGL submits that the definition of 'Demand Customer List' in Schedule 3 of the access arrangement proposal is inefficient as Jemena may provide a list in a form other than an electronic form.¹⁵⁸⁷ It considers that a non-electronic demand customer list is not acceptable and requests that the relevant discretion wording be removed from the definition.

AER's analysis and considerations

The AER considers that the definition should be amended to reflect only the most efficient form of demand customer list, as outlined in the amendment below. The most efficient form is an electronic form. Any manual form of the list would be inefficient.

Before the access arrangement proposal can be accepted, Jemena must make the following amendment:

Amendment 14.30: amend the access arrangement proposal to delete the following words from the definition of 'Demand Customer List' in clause 1.1 of Schedule 3:

(or such other form determined by the Service Provider)

14.3 Queuing requirements

14.3.1 Regulatory requirements

Queuing requirements are to be included in a full access arrangement if the AER has given prior notification of the need to include queuing requirements under r. 103 of the NGR.

¹⁵⁸⁶ NGL, s. 23.

¹⁵⁸⁷ AGL, *Submission to the AER*, 10 November 2009, appendix, p. 1.

Rule 103(3) of the NGR provides that queuing requirements must establish a process or mechanism (or both) for establishing an order of priority between prospective users of spare or developable capacity (or both) on which all prospective users (whether associates of, or unrelated to, the service provider) are treated on a fair and equal basis.

Rule 103(5) of the NGR provides that queuing requirements must be sufficiently detailed to enable prospective users:

- to understand the basis on which an order of priority between them has been, or will be, determined; and
- if an order of priority has been determined – to determine the prospective user’s position in the queue.

14.3.2 Jemena’s submission

Jemena states that if there is insufficient capacity to satisfy a request for a service, a queue will be formed.¹⁵⁸⁸ The order of priority of supply will be determined on a first come, first served basis.¹⁵⁸⁹ Capacity will be offered to queued prospective users in order of priority, notwithstanding that the capacity may not be sufficient to meet that user’s needs.¹⁵⁹⁰

Jemena submits that requests for services of less than one TJ per annum will have priority over requests for services of more than 1 TJ per annum.¹⁵⁹¹ Requests for reference services will have priority over requests for negotiated services.¹⁵⁹²

14.3.3 AER’s analysis and considerations

Jemena’s queuing requirements are largely the same as those approved by the IPART in the earlier access arrangement period.¹⁵⁹³

Jemena is not required to include queuing requirements as it operates a distribution pipeline and the AER has not required Jemena to include queuing requirements.¹⁵⁹⁴

That said, the AER has reviewed Jemena’s queuing requirements set out in the access arrangement proposal and notes:

- section 6.1 sets out how a queue is formed and how users are advised of their position in the queue, in accordance with r. 103(3)–(5) of the NGR

1588 Jemena, *Access arrangement proposal*, August 2009, p. 31.

1589 Jemena, *Access arrangement proposal*, August 2009, clause 6.1(b), p. 31.

1590 Jemena, *Access arrangement proposal*, August 2009, clause 6.2(a), p. 32.

1591 Jemena, *Access arrangement proposal*, August 2009, clause 6.4(b), p. 32.

1592 Jemena, *Access arrangement proposal*, August 2009, clause 6.4(c), p. 33.

1593 IPART, *Revised access arrangement for AGL Gas Networks: Draft Decision*, December 2004, pp. 155–158.

1594 NGR, r. 103(1)(b).

- section 6.2 sets out the conditions applicable to a queue. This satisfies the requirements of r. 103(3) and r. 103(5) of the NGR
- section 6.3 sets out the procedure when capacity can be made available. This satisfies the requirements of r. 103(4)–(5) of the NGR
- section 6.4 sets out the priority of prospective users in accordance with r. 103(4) of the NGR
- section 6.5 sets out the compensation for holding capacity and section 6.6 sets out general terms. These include the treatment of requests in the event of a dispute and the ability of prospective users to supply gas at the time anticipated.

The AER proposes to accept Jemena’s proposed queuing requirement as this meets the requirements of r. 103 of the NGR.

14.4 Capacity trading requirements

14.4.1 Regulatory requirements

Capacity trading requirements are to be included in a full access arrangement.

Rule 105(1) of the NGR notes that capacity trading requirements must provide for the transfer of capacity in accordance with the rules or procedures of the relevant gas market if the service provider is registered as a participant in a particular gas market. If the service provider is not so registered or the rules or procedures do not address capacity transfers, then r. 105 of the NGR applies.

Rule 105(2) of the NGR concerns the transfer of capacity trading requirements without the service provider’s consent. The transfer of capacity with a service provider’s consent is detailed in r. 105(3) of the NGR. Capacity trading requirements may specify conditions under which consent will or will not be given and conditions to be complied with if consent is given. A service provider is precluded from withholding its consent unless it has reasonable grounds, based on technical or commercial considerations, for doing so.

14.4.2 Jemena’s submission

Jemena proposes that a user may transfer all or any of its contracted capacity for a haulage reference service in accordance with the provisions of Schedule 3 of the access arrangement proposal.¹⁵⁹⁵

Schedule 3 of the access arrangement proposal provides that where the *Retail Market Procedures (NSW and ACT)* (Retail Market Procedures) or another procedure for the operation of the retail market for gas in New South Wales applies, a user may transfer any or all of its rights under the Agreement in accordance with the procedures.¹⁵⁹⁶ Where the Retail Market Procedures do not apply, a user may transfer all of the user’s contracted capacity to another person without Jemena’s consent. The user must

¹⁵⁹⁵ Jemena, *Access arrangement proposal*, August 2009, p. 5.

¹⁵⁹⁶ Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 29.3, p. 80.

immediately notify Jemena of the subcontract and its likely duration, the identity of the third party and the amount of the contracted capacity transferred.¹⁵⁹⁷

Jemena's access arrangement proposal outlines timelines for responding to users' capacity transfer requests where the Retail Market Procedures do not apply.¹⁵⁹⁸

14.4.3 AER's analysis and considerations

The AER has reviewed Jemena's capacity trading requirements and notes that section 8(a) of the access arrangement proposal states that users may transfer contracted capacity for the haulage service in accordance with Schedule 3 of the access arrangement proposal.¹⁵⁹⁹ Clause 29.3 of Schedule 3 of the access arrangement proposal states that where the Retail Market Procedures apply, users may transfer any or all rights under Schedule 3 of the access arrangement proposal in accordance with the Retail Market Procedures.

Clause 29.4(b) of Schedule 3 of the access arrangement proposal provides that the user may transfer all or any of its contracted capacity to another party with Jemena's consent. It does not refer to or state the consequences outlined in r. 105(3)(a) and r. 105(3)(b) of such a transfer and must be amended as set out in amendment 14.31.

Clause 29.4(b) of Schedule 3 of the access arrangement proposal also states that Jemena may not withhold its consent to a proposed transfer unless it has reasonable grounds, based on technical or commercial considerations for doing so. No examples are provided. The AER requires Jemena to amend clause 29.4(b) as set out in amendment 14.31 to include an example as this will provide greater certainty to users and accordingly promote the national gas objective outlined in s. 23 of the NGL. Section 3.11 of the Code sets out examples of things that would be reasonable for the purposes of the trading policy. The NGR does not contain an equivalent provision. An example of a reasonable commercial and technical ground would be where, after the change, Jemena would not receive at least the same amount of revenue it would have received before the change.

Conclusion

The AER does not propose to approve the capacity trading requirements proposed by Jemena as these do not comply with r. 105 of the NGR and requires Jemena to make the following amendments:

Amendment 14.31: amend the access arrangement proposal to:

- include the words 'as outlined in rule 105(3) of the NGR' before the full stop of the first sentence in clause 29.4(b) of Schedule 3
- include the words 'An example might be, if the Service Provider would not receive at least the same amount of revenue it would have received before the change' as a third sentence in clause 29.4(b) of Schedule 3.

1597 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 29.3, p. 80.

1598 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 29.4, pp. 80–81.

1599 Jemena, *Access arrangement proposal*, August 2009, p. 35.

14.5 Extensions and expansions policy

14.5.1 Regulatory requirements

Extension and expansion requirements are to be included in a full access arrangement.

Rule 104(1) of the NGR provides that extension and expansion requirements may state whether the applicable access arrangement will apply to incremental services provided as a result of a particular extension or expansion or outline how this may be dealt with at a later time. Insofar as the requirements provide that an access arrangement applies to incremental services, r. 104(2) of the NGR states that the requirements must deal with the effect of the extension or expansion on tariffs.

14.5.2 Jemena's submission

Jemena proposes that all extensions and expansions to its pipeline will be taken to form part of its covered pipeline unless the AER declares otherwise.¹⁶⁰⁰

Jemena submits that where an extension or expansion is treated as part of the covered pipeline, the reference tariff will apply unchanged.¹⁶⁰¹

14.5.3 AER's analysis and considerations

The only amendment Jemena proposes to make from the earlier access arrangement period is to clarify that it will offer reference services in respect of extensions and expansions that form part of its covered pipeline at the reference tariff.¹⁶⁰²

The AER has reviewed Jemena's extension and expansion requirements and requires several amendments as outlined below.

Clause 7(a)(i) of the access arrangement proposal provides that extensions and expansions will be subject to the extensions and expansions policy from the date of completion of the extension or expansion. Clauses 7(a)(ii)–7(a)(iv) provide that an extension or expansion will not be covered if Jemena applies to the AER and the AER declares the extension or expansion not to be covered by the access arrangement proposal.

The AER considers that whether a particular extension should be part of the covered pipeline and subject by default to the access arrangement will depend on whether the extension relates to a high pressure pipeline or a medium or low pressure pipeline.

High pressure pipeline extensions

If Jemena seeks to extend a high pressure pipeline it will be required to apply to the AER for a decision regarding whether or not the proposed extension will form a part of the covered pipeline and, therefore, be covered by the access arrangement. This will enable the AER to consider on each occasion whether it is appropriate in the

1600 Jemena, *Access arrangement proposal*, August 2009, p. 34.

1601 Jemena, *Access arrangement proposal*, August 2009, p. 35.

1602 Jemena, *Access arrangement proposal*, August 2009, p. 34.

circumstances for the proposed extension to be covered by the access arrangement and whether this is in accordance with the national gas objective.¹⁶⁰³

The AER notes that high pressure pipeline extensions have characteristics similar to transmission pipelines and, from a pipeline coverage perspective, should not receive default coverage under the access arrangement. The pipeline can be extended for a variety of reasons such as servicing a large industrial user requiring the network to be extended to its premises or supporting the distribution network generally. Therefore, the reasons for the extension and the degree of its integration into the existing network will assist in determining whether the extension should be covered. In the circumstances, the AER considers it is not appropriate for high pressure pipeline extensions to receive coverage under the access arrangement by default. The AER will be best placed to consider such matters with any degree of certainty at the time it is notified of a proposed high pressure pipeline extension. Sections 7(a)(i)-(iv) of the access arrangement proposal should be amended accordingly.

Clause 7(c) provides that an extension or expansion will not affect reference tariffs if the extension or expansion is a part of the network. Jemena therefore complies with the requirement set out in r. 104(2) of the NGR that extension or expansion requirements deal with the effect of the extension or expansion on tariffs. However, the AER considers, in accordance with r. 40(3) of the NGR, wording based more closely on r. 83(2) of the NGR to be preferable. The AER accordingly considers that Jemena must amend clause 7(c) of the access arrangement proposal to clarify that the proposed surcharge is to be levied on users of incremental services and is designed to recover non-confirming capital expenditure or a specified portion of non-confirming capital expenditure.

Low and medium pressure pipeline extensions

The AER considers that it is appropriate that low and medium pressure pipeline extensions be covered by default by the access arrangement, subject to Jemena notifying the AER that the extensions have been made. Low and medium pressure pipeline extensions to distribution networks are often embedded in and occur throughout the network. Coverage by default will allow such extensions to be built and covered by the access arrangement. This is likely to contribute to the promotion of the efficient investment in, and efficient operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to safety, reliability and security of supply of natural gas.¹⁶⁰⁴ Jemena must advise the AER within 20 business days of completion of its financial year of all low and medium pressure pipeline extensions including all extensions commenced, in progress and completed during that financial year. Section 7 of the access arrangement proposal should be amended accordingly.

Expansions

Clauses 7(a)(ii)–7(a)(iv) of the access arrangement proposal provide that extensions or expansions will be covered unless Jemena applies to the AER and the AER declares the extension or expansion not to be covered by the access arrangement.

1603 NGL, s. 23.

1604 NGL, s. 23.

The AER accepts that expansions of pipeline capacity should be covered by default by the access arrangement subject to the AER being notified that the expansion has occurred.

Default coverage will address any concerns regarding the potential for a service provider to exercise market power. Default coverage of expansions to the pipeline will therefore promote the efficient investment in, and efficient operation and use of, natural gas services for the long-term interests of consumers of natural gas with respect to safety, reliability and security of supply of natural gas.¹⁶⁰⁵ Section 7 of the access arrangement proposal should be amended accordingly. Jemena must advise the AER within 20 business days of completion of its financial year of all expansions including all expansions commenced, in progress and completed during that financial year. Section 7 of the access arrangement proposal should be amended accordingly.

Conclusion

The AER does not propose to approve Jemena's extensions and expansions requirements as a preferable alternative exists under r. 40(3) of the NGR and requires Jemena to make the following amendments:

Amendment 14.32: amend the access arrangement proposal to delete clauses 7(a)(i)–(iv) and replace them with the following:

- (i) If Jemena proposes a high pressure pipeline extension of the covered pipeline it must apply to the AER in writing to decide whether the proposed extension will be taken to form part of the covered pipeline and will be covered by this access arrangement. The application must be made in accordance with clause 7(a)(ii).

For the purposes of this section 7, a high pressure pipeline extension means a pipeline that exceeds one kilometre in length and is proposed to be built to a postcode area previously not serviced by reticulated gas.

- (ii) Jemena must apply to the AER under clause 7(a)(i) before the proposed high pressure pipeline extension comes into service:
 - in writing;
 - stating whether Jemena intends for the proposed extension to be covered by the Access Arrangement; and
 - describing the high pressure pipeline extension and setting out why the extension is being undertaken.
- (iii) Jemena is not required to advise the AER under clause 7(a)(i) to the extent that the cost of the high pressure pipeline extension has already been included in the calculation of Reference Tariffs.
- (iv) After considering the Service Provider's application, and undertaking such consultation as the AER considers appropriate, the AER will inform the Service Provider of its decision on the Service Providers' proposed coverage approach for the high pressure pipeline extension.

¹⁶⁰⁵ NGL, s. 23.

- (v) The AER's decision referred to in 7(a)(iv) above, may be made on such reasonable conditions as determined by the AER and will have the effect stated in the decision.

Amendment 14.33: amend the access arrangement proposal to delete clause 7(b) and replace it with the following:

Any extensions to and expansions of the capacity of the Network which are not high pressure pipeline extensions within the meaning of clause 7(a)(i) will be treated as part of the Network and covered by this Access Arrangement.

Amendment 14.34: amend the access arrangement proposal to include the following new clause 7(bb):

All extensions of low or medium pipelines and expansions of the capacity of the Network carried out by the Service Provider will be treated as covered under this Access Arrangement. No later than 20 Business Days following the expiration of its financial year, the Service Provider must notify the AER of all extensions of low or medium pipelines and expansions of the capacity of the Network during that financial year, including all expansions commenced, in progress and completed. The notice must describe each extension and expansion and set out why this was necessary.

Amendment 14.35: amend the access arrangement proposal to include at the end of clause 7(c) the following:

The Service Provider will notify the AER of any proposed surcharge to be levied on users of incremental services and designed to recover non-conforming capital expenditure or a specified portion of non-confirming capital expenditure (non-confirming capital expenditure which is recovered by means of a surcharge will not be rolled into the capital base).

Amendment 14.36: amend the access arrangement information to reflect amendments 14.32–14.35.

14.6 Terms and conditions for changing receipt and delivery points

14.6.1 Regulatory requirements

The terms and conditions for changing receipt and delivery points are to be included in a full access arrangement.

Rule 106 of the NGR provides that an access arrangement must provide for the change of a receipt or delivery point with the service provider's consent. The service provider is precluded from withholding its consent unless it has reasonable grounds, based on technical or commercial considerations, for doing so. The access arrangement may specify conditions under which consent will or will not be given and conditions to be complied with if consent is given.

14.6.2 Service provider's proposal

Jemena's access arrangement proposal outlines that users may change receipt and delivery points.¹⁶⁰⁶ Prior written consent must be obtained from Jemena.¹⁶⁰⁷ However, multiple receipt points recognised as the same short term trading market hub are excluded.¹⁶⁰⁸

Jemena may refuse its consent or make its consent subject to reasonable commercial or technical conditions.

Schedule 3 of the access arrangement proposal outlines timelines for responding to users' requests.¹⁶⁰⁹

14.6.3 AER's analysis and considerations

Clause 13(b) of Schedule 3 of the access arrangement proposal states that Jemena may refuse its consent or make its consent subject to reasonable commercial or technical conditions. No examples are given.

The inclusion of examples provides greater certainty to users and will promote the national gas objective outlined in s. 23 of the NGL.

Section 3.11 of the Code sets out examples of things that would be reasonable for the purposes of a trading policy. The NGR does not contain an equivalent provision but does permit for examples to be given.¹⁶¹⁰ An example of a reasonable commercial and technical ground would be where, after the change, Jemena would not receive at least the same amount of revenue it would have received before the change.

Conclusion

The AER does not propose to approve the terms and conditions for changing receipt and delivery points proposed by Jemena as these do not comply with r. 106 of the NGR and requires Jemena to make the following amendment:

Amendment 14.37: amend the access arrangement proposal to delete clause 13(b) of the Schedule 3 and replace it with the following:

The User may not change a Receipt Point or a Delivery Point without the Service Provider's prior written consent, which shall only be withheld on reasonable commercial or technical grounds, and which may be given subject to reasonable commercial and technical conditions. An example might be, if Jemena would not receive at least the same amount of revenue it would have received before the change.

1606 Jemena, *Access arrangement proposal*, August 2009, p. 36.

1607 Jemena, *Access arrangement proposal*, August 2009, clause 9(a), p. 42.

1608 Jemena, *Access arrangement proposal*, August 2009, schedule 3, clause 13(a), p. 42.

1609 Jemena, *Access arrangement proposal*, August 2009, schedule 3, p. 42.

1610 NGR, r. 106(2).

14.7 Acceleration of review submission date triggers

14.7.1 Regulatory requirements

The review submission date may advance to an earlier date than that fixed in the access arrangement if the access arrangement provides for acceleration on the occurrence of a trigger event and this event occurs. Rule 51(2) of the NGR provides examples of possible trigger events. The AER may insist on the inclusion of trigger events and may specify the nature of the trigger events.¹⁶¹¹

14.7.2 Jemena's proposal

Jemena's access arrangement proposal does not include a trigger event.¹⁶¹²

14.7.3 AER's analysis and considerations

The AER notes that the retail energy and gas connections frameworks are expected to be introduced during the access arrangement period. These frameworks may impact the terms and conditions of access for users and potential users, such as the credit support provisions proposed under the NECF. In these circumstances, the AER considers that a trigger event should be included to enable the AER to review the approved terms and conditions of access for consistency with the arrangements proposed under these new frameworks.

Conclusion

The AER does not propose to approve Jemena's proposed non-treatment of the acceleration of review submission date triggers and in accordance with r. 51(3) of the NGR, the AER requires Jemena to amend its access arrangement proposal as outlined in amendment 14.38 below:

Amendment 14.38: amend the access arrangement proposal to include the following new clause 1.8:

The AER may require Jemena to revise its access arrangement for inconsistencies with changes to the terms and conditions of access between the approved access arrangement and the NGL or NGR.

The revisions submission date stated in clause 1.6 of the access arrangement proposal will advance on the occurrence of a *trigger event* described below.

For the purposes of this clause, a 'trigger event' occurs if:

- (a) there is an amendment to the National Gas Law or the National Gas Rules, or the National Energy Retail Law or National Energy Retail Rules commence operation in NSW; or
- (b) the STTM does not operate as anticipated and the Access Arrangement does not effectively accommodate the STTM; and
- (c) the AER provides Jemena with a notice stating that the circumstances described in (a) or (b) are significant. An amendment or the

¹⁶¹¹ NGR, r. 51(3).

¹⁶¹² Jemena, *Access arrangement proposal*, August 2009, p. 4.

commencement in NSW of the National Energy Retail Law or National Energy Retail Rules is significant if it affects or impacts upon reference tariffs.

The new review submission date will be the date 6 months from the date of the notice provided by the AER under this clause.

14.8 Review dates

14.8.1 Regulatory requirements

Rule 48(1) of the NGR provides that a full access arrangement must specify certain information for pipeline services including reference services. Unless the full access arrangement is voluntary, it must contain a review submission date and the revision commencement date. However, it does not have to include an expiry date.

As a general rule, a review submission date will fall four years after the access arrangement took effect or the last revision commencement date and a revision commencement date will fall five years after that time. The AER is required to accept a service provider's proposed review submission and commencement dates if these are made in accordance with the general rule set out in r. 50 of the NGR. It may also approve dates that do not conform with the general rule, if it is satisfied that the dates are consistent with the national gas objective and the revenue and pricing principles.

14.8.2 Jemena's proposal

Jemena proposes a review submission date of 30 June 2014 and a revision commencement date of 1 July 2015.¹⁶¹³

14.8.3 AER's analysis and consideration

Jemena appears to rely on the revision commencement date (1 July 2010) as the starting point for calculating the four years. The review submission date should accordingly fall on 1 July 2014.

The AER is satisfied that the review submission date of 30 June 2014 proposed by Jemena is consistent with the national gas objective¹⁶¹⁴ and the revenue and pricing principles¹⁶¹⁵ and accordingly approves this date in accordance with r. 50(4) of the NGR.

1613 Jemena, *Access arrangement proposal*, August 2009, p. 4.

1614 NGL, s. 23.

1615 NGL, s. 24.

A. Jemena submission on the Da, Guo and Jagannathan working paper

On 22 December 2009, Jemena made a submission on the AER's draft decision for ActewAGL's ACT, Queanbeyan and Palerang gas distribution network.¹⁶¹⁶ The submission includes a report by NERA (the NERA report on DGJ09), dealing with aspects of a working paper by Da, Guo and Jagannathan on the capital asset pricing model (CAPM) (the Da, Guo and Jagannathan working paper) referred to in that draft decision.¹⁶¹⁷ In its cover letter for this submission Jemena requests that the AER also consider this material for the Jemena access arrangement review.¹⁶¹⁸

Jemena states—based on the NERA report on DGJ09—that the Da, Guo and Jagannathan working paper cannot be relied on because of methodological errors and data limitations.¹⁶¹⁹ Further, Jemena states that the AER has incorrectly interpreted the evidence in the working paper,¹⁶²⁰ and concludes that the empirical evidence in the Da, Guo and Jagannathan working paper rejects the CAPM but supports the position that factors additional to beta (such as those in the FFM) are required to correctly explain the rate of return on equity.¹⁶²¹

The AER notes that its considerations of the limitations of the FFM for the Jemena draft decision rely on a range of material and not just this working paper.¹⁶²² That said, the AER sets out the details of its considerations of the NERA report on DGJ09,¹⁶²³ as the AER does include references to the Da, Guo and Jagannathan working paper.

The NERA report on DGJ09 states that any criticism based on Roll's critique,¹⁶²⁴ while relevant to a theoretical discussion on the cost of equity, is irrelevant to any practical evaluation of alternative cost of equity models.¹⁶²⁵

1616 Jemena, *Submission on ActewAGL decision*, 22 December 2009. Attached report is NERA, *Review of Da, Guo and Jagannathan empirical evidence on the CAPM: A report for Jemena Gas Networks*, 21 December 2009 (NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009).

1617 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009. The source paper is Da, Guo and Jagannathan, 'CAPM: Interpreting the evidence', 2009, *NBER working paper 14889*.

1618 Jemena, *Submission on ActewAGL decision*, 22 December 2009, p. 1.

1619 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 3–12.

1620 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 13–15.

1621 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 15–25.

1622 The AER considers there are many such papers—for example, see Tables 5.3 and 5.4 in chapter 5. The AER notes that its considerations of the relative evaluation of the FFM relative to the CAPM also relies on a range of material.

1623 This consideration occurred to the extent possible given the time available. Submissions on the Jemena proposal closed on 10 November 2009, but the letter from Jemena (and accompanying report) was not received until 22 December 2009.

1624 The core idea of Roll's critique is that (in-practice) CAPM tests using a market proxy can neither prove nor disprove the (theoretical) CAPM. Source paper is R. Roll, 'A critique of the asset pricing theory's tests', *Journal of Financial Economics*, 1977, vol. 4(2), pp. 129–176.

1625 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 13–14 (section 4.2). In particular, NERA states (p. 14): 'A different issue concerns us, though, than that which concerns Roll. The issue that concerns us is whether an empirical version of the CAPM produces accurate estimates of required returns. The issue that concerns Roll, but not us here, is whether the CAPM itself is true.'

The AER considers that one key difference between the CAPM and the FFM is that the CAPM has a theoretical basis, separate from the empirical data, but the FFM has no justification outside the relationship observed in the empirical data.¹⁶²⁶ For this reason, Roll's critique has some relevance to the current discussion. The AER considers that the NERA report on DGJ09 overstates the division between CAPM theory and CAPM practice in the current context.

The NERA report on DGJ09 states that evaluation of alternative cross-sectional regressions based on the R^2 statistic is inappropriate. Instead, evaluation should be based on whether parameter estimates are statistically equivalent to model predictions.¹⁶²⁷

The AER considers that assessing whether the obtained regression parameters match model restrictions is a useful test of the empirical support for that model. The AER's presentation of Table 5.4 in chapter 5 and Table A.2 in this appendix is consistent with this approach. However, the AER considers that the R^2 statistic is one means to evaluate the explanatory power of a model. The AER notes that the papers it cites in Tables 5.3 and 5.4 of chapter 5 use a range of valid statistical techniques, including assessments of regression parameters against model predictions.

The NERA report on DGJ09 states that the Da, Guo and Jagannathan working paper cannot be relied on because it uses aged betas without academic support,¹⁶²⁸ following the withdrawal by Hoberg and Welch of their working paper on this issue.¹⁶²⁹

The AER does not consider that this is a relevant matter for the draft decision, as the AER does not rely on those sections of the Da, Guo and Jagannathan working paper that use aged betas. The AER notes that these are discrete portions of the content.¹⁶³⁰

The NERA report on DGJ09 states that the 'real options' explanation for CAPM mispricing cannot be correct. The NERA report on DGJ09 references papers by Lewellen and Nagel, and Petkova and Zhang, which state that no conditional CAPM can explain a sufficient amount of mispricing.¹⁶³¹

1626 This issue is explained in chapter 5.

1627 NERA, Review of Da, Guo and Jagannathan, 21 December 2009, pp. 15–18 (section 4.4), 20–21.

1628 NERA, Review of Da, Guo and Jagannathan, 21 December 2009, pp. 11–12 (section 3.3). Source document is G. Hoberg and I. Welch, 'Aged and recent market betas in securities prices', *Brown University working paper*, 9 September 2007.

1629 In particular, the AER notes that the graph at page 2 of the update by Hoberg and Welch shows no evidence of beta adjustment in keeping with the aged beta theory. Source documents are G. Hoberg and I. Welch, 'Aged and recent market betas in securities prices', *Brown University working paper*, 9 September 2007; G. Hoberg and I. Welch, 'Updates: Aged and recent market betas in securities pricing, errors-in-variables and portfolios vs stocks', *Brown University working paper*, 25 November 2009. Both the original paper and update retracting the original paper are available online, viewed 22 December 2009, <<http://ssrn.com/abstract=987353>>.

1630 The AER notes that none of the papers it cites in Tables 5.3 and 5.4 of chapter 5 of the draft decision use aged betas, but that further work may clarify the usefulness of aged betas.

1631 In particular, NERA states (p. 6): 'They [Lewellen and Nagel] conclude that variation through time in the betas of value and growth stocks and in the MRP cannot explain the value premium because the variation needed to explain the premium is implausibly large.' NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 3–9 (section 2). Source papers are J. Lewellen and S. Nagel, 'The conditional CAPM does not explain asset-pricing anomalies', *Journal of Financial Economics*, 2006, vol. 82, pp. 289–

The AER considers that these two academic papers do not provide a reasonable basis to conclude that all conditional CAPM models must be incorrect. The Da, Guo and Jagannathan working paper,¹⁶³² as well as in another paper by Ang and Chen outline several methodological shortcomings in these papers.¹⁶³³ Most importantly, Lewellen and Nagel use high-frequency short-window regressions, which allow unrelated factors to distort parameter estimates.¹⁶³⁴ Further, the statistical framework used in both the Lewellen and Nagel paper and the Petkova and Zhang paper fails to correctly account for the asymptotic distribution of error terms, invalidating their conclusions on the conditional CAPM.¹⁶³⁵

The NERA report on DGJ09 notes that the Da, Guo and Jagannathan working paper filters a large number of stocks from the data set,¹⁶³⁶ and considers that this invalidates its conclusions on the relative performance of the two models.¹⁶³⁷ In particular, the NERA report on DGJ09 states that these data restrictions favour the CAPM over the FFM by reducing the number of small firms and value firms (those with high book-to-market ratios).

For the draft decision the AER considers a range of papers in tables 5.3 and 5.4 of chapter 5 with a wide range of data sets, including several papers based on the Fama–French data library.¹⁶³⁸ As a consequence, the concerns outlined in the NERA report on DGJ09 about the filtering process adopted in the Da, Guo and Jagannathan working paper do not affect the AER’s overall conclusion on the appropriateness of FFM. Moreover, the AER considers that these criticisms are not relevant to the AER’s draft decision, since the data set in the Da, Guo and Jagannathan working paper retains sufficient variation in book-to-market ratios, and the retained data set is relevant to the conditions of the benchmark firm. The AER notes that there are two distinct aspects to the data filtering concerns raised in the NERA report on DGJ09:

314 and R. Petkova and L. Zhang, ‘Is value riskier than growth?’, *Journal of Financial Economics*, 2005, vol. 78, pp. 187–202.

1632 Da, Guo and Jagannathan, CAPM: interpreting the evidence, 2009, *NBER working paper 14889*, p. 5.

1633 Ang and Chen, ‘CAPM: 1926–2001’, *Journal of Empirical Finance*, 2007.

1634 Da, Guo and Jagannathan, CAPM: interpreting the evidence, 2009, *NBER working paper 14889*, p. 5. Further, Ang and Chen note the inconsistent estimates of conditional alphas and betas in the Lewellen and Nagel paper. Ang and Chen, ‘CAPM: 1926–2001’, *Journal of Empirical Finance*, 2007, p. 3.

1635 Ang and Chen, ‘CAPM: 1926–2001’, *Journal of Empirical Finance*, 2007, p. 3.

1636 Specifically, Da, Guo and Jagannathan remove very small firms (less than the NYSE 10th percentile), cheap firms (share price less than \$5), momentum firms (performance in the top or bottom 10 per cent over the previous 12 months) and new firms (listed less than three years). Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*, pp. 16–17.

1637 In particular, NERA states (p. 11): ‘Cutting small firms and value firms from their sample may improve the apparent performance of the Sharpe–Lintner CAPM since there is ample evidence that the model misprices the stocks of small firms and value firms. Conversely, cutting small firms and value firms from their sample may reduce the apparent benefit to using the Fama–French three–factor model since the model does a better job of pricing the stocks of small firms and value stocks.’ NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 10–11, 14–15 (sections 3.2, 4.3).

1638 This is the data set maintained by the economist Ken French and available at <http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html>. In particular, see Ang and Chen (who mirror the Davis, Fama and French portfolios) and Grauer and Janmaat (who use 14 different datasets from this library). See Ang and Chen, ‘CAPM: 1926–2001’, *Journal of Empirical Finance*, 2007, p. 4, Davis, Fama and French, ‘Average returns: 1929 to 1997’, *Journal of Finance*, 2000, R. Grauer and J. Janmaat, ‘Cross-sectional tests of the CAPM and Fama–French three-factor model’, *Journal of Banking and Finance*, 2010, vol. 34, p. 457,

- the size of the firms remaining in the data set
- the book-to-market ratios of the firms remaining in the data set.¹⁶³⁹

On the size of firms issue, the AER notes that the data set does not contain small firms. This is because the Da, Guo and Jagannathan working paper attempts to explain the return on equity for basic projects, avoiding extreme size conditions where (it postulates) real options have a greater effect on rate of return.¹⁶⁴⁰ Further, the focus on large and mature firms in the Da, Guo and Jagannathan working paper reduces concerns over information asymmetry and mispricing.¹⁶⁴¹ The AER notes that the data set contains 75 per cent of the market by value, and considers that conclusions relevant to the benchmark firm can be drawn from this analysis.

On the book-to-market issue, the AER notes that the Da, Guo and Jagannathan working paper is concerned with retaining a broad range of variation in book-to-market ratios. The 10 sub-industry portfolios presented in panels 3B and 3C of the Da, Guo and Jagannathan working paper are specifically selected to present a broad range of book-to-market ratios. To illustrate this point, Table A.1 compares the lowest and highest book-to-market portfolios from this section of the Da, Guo and Jagannathan working paper with the 1993 Fama–French paper.

Table A.1: Range of book-to-market ratios

Study	Lowest book-to-market portfolios			Highest book-to-market portfolios		
	Description	B:M ratio	HML coeff.	Description	B:M ratio	HML coeff.
Fama and French, 1993	Portfolio 5(Big)–1(Low)	0.29	-0.46	Portfolio 1(Small)–5(High)	1.80	0.62
Da, Guo and Jagannathan, 2009	Portfolio 8	0.34	-0.08	Portfolio 10	2.85	-0.32

Source: Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*, pp. 41, 42 (panels 3B, 3C); Fama and French, ‘Common risk factors’, *Journal of Financial Economics*, 1993, pp. 11, 24–25 (tables 1, 6).

The AER observes that the 1993 Fama–French paper has portfolios with book-to-market ratios ranging from 0.29 to 1.80. The Da, Guo and Jagannathan working paper has portfolios with book-to-market ratios ranging from 0.34 to 2.85. That is, there is actually more variation in book-to-market ratios in the Da, Guo and Jagannathan working paper than in the original 1993 Fama–French paper that established the FFM approach.

Despite the wide range of book-to-market ratios demonstrated in Table A.1, the portfolios in the Da, Guo and Jagannathan working paper have relatively low and

1639 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, pp. 10–11.

1640 Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*, pp. 4, 7.

1641 Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*, p. 16.

uniform HML coefficients.¹⁶⁴² The AER considers that this is because book-to-market ratios are not a reliable predictor of returns for this data set—a result at odds with the predictions of the FFM.¹⁶⁴³ That is, the FFM predicts that low book-to-market portfolios (growth shares) will have a lower rate of return than high book-to-market portfolios (value shares).¹⁶⁴⁴ Table A.1 illustrates that the expected pattern occurs in the 1993 Fama–French paper, with the lowest book-to-market portfolio (growth shares) having a large negative HML coefficient (−0.46), and the highest book-to-market portfolio (value shares) having a large positive HML coefficient (0.62).¹⁶⁴⁵ However, the pattern is absent in the Da, Guo and Jagannathan working paper, as the lowest book-to-market portfolio has a small negative HML coefficient (−0.08) and the highest book-to-market portfolio has a large negative HML coefficient (−0.32). The AER considers that these results do not support the FFM, and that this cannot be attributed to insufficient variation in the data set.¹⁶⁴⁶

Finally, the AER considers the aggregate evidence in the Da, Guo and Jagannathan working paper. Aside from the time-series regression considered above (panel 3C), and excluding analysis that depends on aged betas,¹⁶⁴⁷ there remain cross-sectional regressions on three different portfolio sets. In Table A.2, the AER assesses them in the context of the concerns raised in with the NERA report on DGJ09 that each parameter estimate must match the model requirements.¹⁶⁴⁸ That is, for each regression:

- The intercept should be statistically indistinguishable from zero. This indicates that the model does not systematically over or under estimate the portfolio return.
- The coefficients for the other factors should be statistically significant from zero (i.e. are not zero). For the CAPM single regression, the market coefficient (beta) should not be zero; and for the FFM multiple regression, the market, HML and SMB coefficients should not be zero. This indicates that the model factors have a meaningful relationship with the portfolio return.

1642 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, p. 20.

1643 More specifically, the AER considers that the obtained regression parameters do not accord with the FFM restrictions. Of the 10 portfolios, six have statistically significant HML coefficients with the sign expected by the FFM; two have statistically insignificant HML coefficients (which would be expected to be significant), and two have statistically significant HML coefficients with the opposite sign. Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*, p. 42 (panel 3C).

1644 NERA, *Fama–French model*, 12 August 2009, pp.13–17.

1645 Fama and French, ‘Common risk factors’, *Journal of Financial Economics*, 1993, pp. 24–25 (table 6).

1646 The AER clarifies that this statement refers to consideration of all 10 portfolios in panel 3c of the Da, Guo and Jagannathan working paper, with these two portfolios serving as an illustration of the broader effect.

1647 This regressions using aged betas are excluded because of the lack of academic support for this approach, as detailed earlier.

1648 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, p. 16.

Table A.2: Parameter estimated from cross-sectional regressions in the Da, Guo and Jagannathan working paper

Regression	Model prediction	Panel 2D 10 portfolios, sorted on beta	Panel 3A 30 portfolios, sorted on industry and BM	Panel 3D 10 portfolios, sorted on industry with BM spread
CAPM	Intercept = zero	No	Yes	Yes
	Beta \neq zero	No	Yes	Yes
FFM	Intercept = zero	Yes	No	No
	Market coefficient \neq zero	No	No	No
	SMB coefficient \neq zero	No	Yes ^a	No
	HML coefficient \neq zero	No	No	Yes

Source: Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*, pp. 39 (panel 2D), 40 (panel 3A) and 43 (panel 3D).

Note: Excludes all regressions using aged betas. Evaluation is at the conventional level of statistical significance, five per cent.

a: The SMB coefficient is borderline significant (t-statistic = 1.98).

As shown in Table A.2, the AER considers that two of the three cross-sectional analyses show the parameter patterns predicted by the CAPM. The intercepts are equal to zero and the beta estimates are not equal to zero (both at the conventional level of statistical certainty, five per cent). In contrast, none of the cross-sectional analyses support the FFM. In each case, at most one of the four parameter estimates matches the model requirements (at the conventional level of statistical certainty).

In particular, the AER notes that panel 3D of the Da, Guo and Jagannathan working paper does not reject the Sharpe–Lintner CAPM,¹⁶⁴⁹ as stated in the NERA report on DGJ09.¹⁶⁵⁰ The NERA report on DGJ09 incorrectly states that the return to the zero-beta portfolio exceeds the risk-free rate, but the AER notes that the CAPM intercept of 0.06 per cent per month is statistically equivalent to zero.¹⁶⁵¹ Further, the AER notes that the intercept on the FFM regression is 0.73 per cent per month (and statistically significant). That is, based on this evidence in panel 3D, the FFM produces a systematically biased estimate of return, but the CAPM produces an estimate that is not systematically biased.

In the draft decision, the AER relies on aspects of the Da, Guo and Jagannathan working paper as part of a range of papers that critique the FFM.¹⁶⁵² The concerns raised by the NERA report on DGJ09 do not apply to this broad range of papers and

1649 Da, Guo and Jagannathan, ‘CAPM: Interpreting the evidence’, 2009, *NBER working paper 14889*, p. 39.

1650 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, p. 20.

1651 NERA, *Review of Da, Guo and Jagannathan*, 21 December 2009, p. 20.

1652 See tables 5.3 and 5.4 in chapter 5 of this draft decision.

so do not affect the AER's overall conclusion on the appropriateness of the FFM. Considering the Da, Guo and Jagannathan working paper in isolation, the AER notes that several criticisms in the NERA report on DGJ09 are not valid. The AER considers that the Da, Guo and Jagannathan working paper does not show support for the FFM, but does show support for the Sharpe–Lintner CAPM.¹⁶⁵³

1653 As the FFM does not meet the requirements of r. 87 of the NGR, the AER does not need to make an assessment under r. 40(3) of the NGR.

B. Confidential averaging period

C. Confidential self insurance

D. Statement of costs

O&M Opex (JAM Asset Management Services)

Category	Total (\$)	Allocated to Reference Services (%)	Amount Categorised From Capex	Amount Categorised To Capex
DIRECT JAM COSTS (INTERNAL COSTS BY TYPE)				
Overheads (by functional area)				
e.g. technical asset management, asset strategy, compliance, engineering, operational support, stores, logistics, scheduling, marketing, billing				
Technical Training (by technical standard/issue)				
- Safety/technical				
- Safety management studies for primary mains and trunks				
- Business safety & operational plan				
- etc				
Network Management Costs (itemised)				
- Itemise network management costs				
STTM Costs (by nature of costs)				
- Itemise by nature of costs				
Regulatory Costs				
- Regulatory accounts				
- etc				
Operating &				

Maintenance(itemised)				
IT O&M (by project & IT asset)				
- e.g. ESF costs for corporate systems (needs to include name of corporate system and purpose e.g. billing)				
- e.g. gas make whole project				
Monitoring & Inspection (by asset & program)				
- Pigging				
- Mains – Inspection				
- Mains – Enroachment				
- etc				
Repairs & Maintenance (by asset & program)				
- TRS/POTS e.g. painting				
- Pressure vessel				
- Water bath heaters e.g. overhauls, site inspection/identification				
- Mains				
- etc				
Meters				
- Reading & other services				
- Additional telecom costs				
- etc				
INDIRECT JAM COSTS (OUTSOURCED COSTS BY NATURE OF COST AND SUB CONTRACTOR)				
Contractors – including related parties (if possible categorised consistently with Overhead & O&M categories for direct				

costs)				
e.g. Contractor name				
- meter read service				
Jemena Group				
- Depreciation				
- HR				
- Corporate Coms				
- Health, safety & environment				
- SP management fee				
- Legal				
- CFO				
- Corporate accounting				
- Finance strategy				
- Taxation				
- Internal audit & risk				
- etc				
TOTAL O&M OPEX				

Non O&M Opex (Jemena Direct Costs)

Category	Total (\$)	Allocated to Reference Services (%)	Amount Categorised From Capex	Amount Categorised To Capex
Administration & Overheads				
Corporate head office costs (by nature of cost)				
- Depreciation				
- HR				
- Corporate comms				
- Health, safety & environment				
- Regulatory				
- SP management fee				
- Legal				
- CFO				
- Corporate accounting				
- Finance strategy				
- Taxation				
- Internal audit & risk				
- etc				
JGN Overheads (by functional area)				
- e.g. finance, legal/contract management, regulatory billing				
Other Costs				
Government levies				
Marketing				
Unaccounted for gas				
Carbon costs				
Insurance				

TOTAL NON O&M OPEX				

**TOTAL OPEX (O&M and
NON O&M)**

E. Summary of non-tariff issues raised in submissions

Matter ¹⁶⁵⁴	Summary of issue raised in submission	Amendment required
General Matters		
National Energy Customer Framework (NECF)	<p>EnergyAustralia and TRUenergy Pty Ltd (TRUenergy) submitted that the draft NECF terms should form the basis for proposed amendments to the access arrangement.¹⁶⁵⁵</p> <p>Details of the NECF are not yet finalised and it is uncertain what impact the new framework might have on the access arrangement. The AER does not consider it appropriate to place reliance on a draft that may still change.</p> <p>Rule 65 of the NGR allows for variations of applicable access arrangement and is available to Jemena if changes to the access arrangement are required following the introduction of the NECF.</p>	None.
Short term trading market (STTM)	<p>EnergyAustralia¹⁶⁵⁶ submitted that the access arrangement proposal and Schedule 3 of the access arrangement proposal are largely silent on Jemena's and users' obligations and requirements for the STTM.</p> <p>The AER does not consider that any amendments are required at the present time. Rule 65 of the NGR allows for variations of applicable access arrangement and is available to Jemena if changes to the access arrangement are required following the introduction of the short term trading market (STTM).</p>	None.
Access Arrangement Proposal		

1654 These refer to the *Access arrangement proposal* and schedule 3 of the *Access arrangement proposal*.

1655 EnergyAustralia, *Jemena Gas Networks (NSW) Ltd's proposed 2010–2015 Access Arrangement & Reference Services Agreement*, November 2009 (EnergyAustralia, *Submission to the AER*, November 2009), pp. 17, 21 and TRUenergy, *Jemena Gas Network - Access Arrangement Proposal 2010 -1015*, 11 November 2009, p. 2 (TRUenergy, *Submission to the AER*, 11 November 2009).

1656 EnergyAustralia, *Submission to the AER*, November 2009, pp. 25–26.

Services Policy – terms and conditions Clause 2.2	AGL Energy (AGL) and EnergyAustralia submitted that clause 2.2 provides insufficient consultation and notification. ¹⁶⁵⁷ The AER considers that clause 2.2, section C (b)–(f) does not comply with the requirements of Division 10 of the NGR.	Amendment 14.2.
Ancillary services	AGL made a submission in relation to schedule 2, section H concerning ancillary fees. ¹⁶⁵⁸ The AER considers that the description of ancillary fees set out in schedule 2, section H ¹⁶⁵⁹ is consistent with the NGR and the national gas objective. The AER is satisfied that the level of information provided in relation to temporary and permanent disconnections suffices. ¹⁶⁶⁰ It also considers that the benefit of stating each precise item for which a ‘request for service’ fee is levied ¹⁶⁶¹ is outweighed by the costs associated with this. Further, it does not consider that removal of a meter to be at Jemena’s discretion under the ‘Permanent Disconnection’ services as submitted by AGL. ¹⁶⁶² The removal of meters forms a part of the ‘Decommissioning and meter removal service’. However, Jemena is required to amend the access arrangement proposal to ensure that: (i) ancillary services are included in the definition of reference services (see chapter 2); (ii) special meter read fees are stated to be charged on a per meter read basis (see chapter 13); and (iii) to specify a reference tariff for ancillary services (see chapter 13).	Amendments 2.1–2.4, 13.1.
Schedule 5 – Request for service	The AER considered a submission from EnergyAdvice Pty Ltd (EnergyAdvice) that Jemena should not limit requests for services to retailers but also permit customers to make these requests. ¹⁶⁶³	None.

1657 AGL, *Submission: JGN Access Arrangement 2010 – 2015*, 10 November 2009, p. 8 (AGL, *Submission to the AER*, 10 November 2009) and EnergyAustralia, *Submission to the AER*, November 2009, p. 6.

1658 AGL, *Submission to the AER*, 10 November 2009, p. 9.

1659 Jemena, *Access arrangement proposal*, August 2005, pp. 60–61.

1660 See AGL, *Submission to the AER*, 10 November 2009, p. 9.

1661 AGL, *Submission to the AER*, 10 November 2009, p. 9.

1662 AGL, *Submission to the AER*, 10 November 2009, p. 9.

1663 EnergyAdvice, *Joint Submission to AER on the Jemena Gas Networks (NSW) Revised Access Arrangement–August 2009*, 10 November 2009, p. 19 (EnergyAdvice, *Submission to the AER*, 10 November 2009).

	The AER is satisfied that the terms of schedule 5 of the access arrangement proposal are consistent with the NGR and the national gas objective as it is Jemena's commercial decision which parties it decides to contract with and accept requests for service from.	
Schedule 3 of the Access Arrangement Proposal – Reference Services Agreement		
Definitions and interpretation Clause 1 Clause 1.1 – Definitions Clause 1.4 – Amendments to this agreement	<p>AGL submits that the definition of 'Demand Customer List' should be amended to require that it be electronic only.¹⁶⁶⁴ The AER agrees with this submission. See chapter 14, section 14.2.18 of the draft decision.</p> <p>The AER received submissions from EnergyAustralia and AGL Energy that the notification period for amendments to Schedule 3 of the access arrangement proposal, set out in clause 1.4 of Schedule 3 of the access arrangement proposal is insufficient.¹⁶⁶⁵ This matter was also considered at the Round table discussion on non-tariff issues.¹⁶⁶⁶</p> <p>The AER considers that the proposed amendment to clause 2.2, section C of the access arrangement proposal, as set out in amendments 14.4 and 14.5, address these concerns. They ensure that variations of the access arrangement are made in accordance with Part 8 of Division 10 of the NGR.</p>	<p>Amendment 14.30.</p> <p>Amendments 14.4 and 14.5.</p>
Commencement and expiry of a reference service Clause 2	<p>No submissions were received on clause 2.</p> <p>The AER is satisfied that Jemena's proposed clause 2 is consistent with the NGR and the national gas objective.</p>	None.
Haulage Reference Service	<p>No submissions were received on clause 3.</p> <p>The AER is satisfied that Jemena's proposed clause 3 is consistent with the NGR and the national gas</p>	None.

1664 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 1.

1665 EnergyAustralia, *Submission to the AER*, November 2009, p. 6 and AGL, *Submission to the AER*, 10 November 2009, appendix, pp. 1–2.

1666 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 2–5.

Clause 3	objective.	
MDQ, MHQ and Chargeable demand Clause 4.5 – chargeable demand Clause 4.6 – increases in chargeable demand Clause 4.7 – decreases in chargeable demand	AGL, EnergyAdvice, EnergyAustralia, Origin and TRUenergy made submissions on chargeable demand, increases and decreases in chargeable demand and the calculation of MDQ/MHQ. ¹⁶⁶⁷ This matter was also considered at the Round table discussion on non-tariff issues. ¹⁶⁶⁸ Following clarification obtained at the Round table discussion on non-tariff issues the AER considers that clauses 4.5 and 4.6 of Schedule 3 of the access arrangement proposal concerning chargeable demand and increases in chargeable demand are consistent with the NGR and the national gas objective. Decreases in chargeable demand (clause 4.7 of Schedule 3 of the access arrangement proposal) is discussed in chapter 14 section 14.2.6 of the draft decision.	Amendment 14.13.
Overruns Clause 5 Clause 5.6(b) – revocation of authorisation	See chapter 14, section 14.2.17 of the draft decision.	None.
Unauthorised overruns Clause 6	See chapter 14, section 14.2.17 of the draft decision.	None.
Nomination and balancing Clause 7 Clause 7.4 – gas balancing under an arrangement approved by the service provider Clause 7.5 – user to	See chapter 14, sections 14.2.6 and 14.2.7 of the draft decision.	Amendments 14.13–14.15.

¹⁶⁶⁷ AGL, *Submission to the AER*, 10 November 2009, appendix, pp. 2–6; EnergyAdvice, *Submission to the AER*, 10 November 2009, p. 6; EnergyAustralia, *Submission to the AER*, November 2009, pp. 6–8; Origin, *Submission to the AER*, 10 November 2009, pp. 6–7.

¹⁶⁶⁸ AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 5– 8.

provide service provider with forecast of withdrawals		
Determination of quantity delivered at delivery points Clause 8	<p>No submissions were received on clause 8.</p> <p>The AER is satisfied that Jemena's proposed clause 8 is consistent with the NGR and the national gas objective.</p>	None.
<p>Commingling, custody, control, responsibility and warranty Clause 9 Clause 9.1 – Warranty and indemnity Clause 9.4 – Responsibility for gas Clause 9.5 – Unaccounted for gas</p>	<p>AGL submitted that: (i) clause 9.4 should be amended to replace the reference to Jemena replacing UAG at a time and on terms determined at its 'absolute discretion' with 'acting reasonably' to ensure that Jemena acts fairly; and (ii) clause 9.5(c) should be amended to exclude material errors from the general 12 month timeframe that applies to 'LG' recalculations.¹⁶⁶⁹</p> <p>The AER does not consider that it is necessary to amend: (i) clause 9.4 as the statement 'absolute discretion' does not of deny fairness; (ii) clause 9.5(c) as a period of 12 months appears sufficient. The AER has not been provided with any information that indicates that a longer period would be necessary.</p> <p>The AER also considered EnergyAustralia's submission that: (i) clause 9.1 does not work in an STTM environment; and (ii) sourcing gas from the STTM, per clause 9.5(e)(ii), should be limited to where it is cheaper than utilising an open tender process.¹⁶⁷⁰ This clause was also discussed at the Round table discussion on non-tariff issues where the parties appeared to accept that they will need to obtain independent advice concerning the operation of clause 9.1 in an STTM environment. The AER does not consider that an amendment of clause 9.5(e)(ii) is needed as clause 9.5 already refers to Jemena purchasing UAG on a 'competitive commercial basis'.</p> <p>The AER notes that amendment of a typographical error is required.</p> <p>The AER is satisfied that Jemena's proposed clause 9 is consistent with the NGR and the national gas objective.</p>	Amendment 14.18.

1669 AGL, *Submission to the AER*, 10 November 2009, appendix, pp. 7–8.

1670 EnergyAustralia, *Submission to the AER*, November 2009, p. 9.

<p>Gas Quality</p> <p>Clause 10</p> <p>Clause 10.1 – Specification gas</p> <p>Clause 10.3 – Consequences of the service provide exercising rights under clause 10.2</p> <p>Clause 10.4 – User to satisfy the service provider</p> <p>Clause 10.7 – amendment of specification</p> <p>Clause 10.10 – gas testing by users</p>	<p>AGL submits : (i) that clause 10.1(a) should be amended to state that Jemena must act reasonably when varying annexure 2 of Schedule 3 of the access arrangement proposal; (ii) querying whether it is practicable to qualify the indemnity in clause 10.1(e) to apply where the user injected the gas; (iii) limit the indemnity in clause 10.3 so that a user’s liability is limited to their actions; (iv) that the scope of clause 10.4 should be made subject to a reasonability limitation or check by inserting the words ‘reasonable satisfaction’; (v) that clause 10.7 should include a timeframe.¹⁶⁷¹</p> <p>The AER does not consider that it is necessary to amend clause: (i) 10.1(a) because variations to the access arrangement are subject to Part 8 Division 10 of the NGR; (ii) 10.1(e) because it is not practicable given the comingling of gas (as was discussed at the Round table discussion on non-tariff issues); (iii) 10.3 because: (a) Jemena is limited to precluding the delivery of gas it ‘reasonably believes’ to be out-of-specification. This imports a reasonable threshold; and (b) Jemena may not be able to determine, where a number of parties are bringing in gas through one receipt point, which party or parties are responsible for bringing in off-specification gas from an upstream transmission pipeline; (iv) 10.4 because it identifies the requirements with sufficient particularity and the threshold of ‘satisfaction’ will not be measurably altered with the proposed insertion of the word ‘reasonable’; (v) 10.7 as variations are subject to Part 8 of Division 10 of the NGR. This also covers minor variations to the access arrangement.</p> <p>The AER also considered a submission from EnergyAustralia, concerning Jemena’s exclusion of liability in relation to clauses 10.1(e), 10.3(c) and (d) and 10.3(i).¹⁶⁷² The reason why no amendments are required in relation to clauses 10.1(e) and 10.3(d) are outlined above. Clause 10.3(c) provides that Jemena will not be liable to the user or its customers if it ceases to deliver gas under clause 10.2. The reasons outlined in relation to AGL’s submission concerning clause 10.3 apply.</p> <p>This clause was also discussed at the Round table discussion on non-tariff issues in connection with liability and indemnities.¹⁶⁷³ See chapter 14, section 14.2.17 of the draft decision.</p> <p>The AER is satisfied that Jemena's proposed clause 10 is consistent with the NGR and the national gas objective.</p>	<p>None.</p>
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1671 AGL, *Submission to the AER*, 10 November 2009, appendix, pp. 8–9.

1672 EnergyAustralia, *Submission to the AER*, November 2009, pp. 15, 28–29, 33–34.

1673 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 16–18.

<p>Addition of delivery points</p> <p>Clause 11</p> <p>Clause 11.4 Transfer of legacy reference service delivery points at commencement of 2010 access agreement</p>	<p>Origin sought greater clarity of the proposed tariff structure and the justification of the 40 per cent tariff increase for legacy services.¹⁶⁷⁴ Clause 11 was also considered at the Round table discussion on non-tariff issues.¹⁶⁷⁵</p> <p>Origin appeared satisfied with the response provided by Jemena at the Round table discussion on non-tariff issues.¹⁶⁷⁶</p> <p>The AER does not consider that any amendment of the clause is required. The AER is satisfied that the proposed clause 11 is consistent with the NGR and the national gas objective.</p> <p>Notwithstanding the above, the AER notes that a typographical amendment is required.</p>	<p>None.</p> <p>Amendment 14.19.</p>
<p>Deletion of delivery points</p> <p>Clause 12</p>	<p>No submissions were received on clause 12.</p> <p>The AER is satisfied that Jemena's proposed clause 12 is consistent with the NGR and the national gas objective.</p>	<p>None.</p>
<p>Change of receipt or delivery point</p> <p>Clause 13</p>	<p>No submissions were received on clause 13.</p> <p>The AER is satisfied that Jemena's proposed clause 13 is consistent with the NGR and the national gas objective.</p>	<p>None.</p>
<p>Receipt points and receipt stations</p> <p>Clause 14</p> <p>Clause 14.9 – Pressure at receipt point.</p>	<p>See chapter 14, section 14.2.5 and section 14.2.17 of the draft decision.</p>	<p>Amendment 14.8.</p>
<p>Delivery points and</p>	<p>See chapter 14, sections 14.2.10 and 15.2.17 of the draft decision.</p>	<p>Amendment 14.20.</p>

1674 Origin, *RE: Jemena Gas Networks Access Arrangement Proposal*, 10 November 2009, p. 1 (Origin, *Submission to the AER*, 10 November 2009).

1675 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 14–16.

1676 AER, *Minutes of roundtable discussion on terms and conditions*, 27 November 2009, pp. 15–16.

<p>delivery stations</p> <p>Clause 15</p> <p>Clause 15.1 – Requirement for a delivery station</p> <p>Clause 15.6 – Basic metering equipment downgrade at existing delivery station</p> <p>Clause 15.11 – Repair of basic metering equipment</p> <p>Clause 15.12 – No liability for disconnection</p>	<p>The AER received a submission from AGL that the words ‘acting reasonable’ be inserted into clauses 15.1(b) and 15.1(d).¹⁶⁷⁷</p> <p>The AER does not consider that it is necessary to amend clause 15.1(b) or clause 15.1(d) to insert the words proposed by AGL as the AER considers the word ‘satisfaction’ used in the clauses sufficient</p> <p>AGL submits that the words ‘or a maximum of 2 business days of becoming aware of a fault at a Basic Metering Equipment’ should be inserted after a ‘reasonable time’ in clause 15.11.¹⁶⁷⁸ The AER does not consider that it is necessary to amend clause 15.11 as it considers that the words ‘within a reasonable time’ in the clause are sufficient.</p> <p>The AER considers that clauses 15.1 and 15.11 are consistent with the NGR and the national gas objective.</p>	
<p>Measuring equipment – access, safety and estimation</p> <p>Clause 16</p> <p>Clause 16.1 – Safe access to measuring equipment</p> <p>Clause 16.3 – Consequences of no</p>	<p>See chapter 14, sections 14.2.11, 14.2.12 and 14.2.13.</p> <p>AGL submits that clause 16.5 should be amended to clarify the conditions where the user can perform actions on measuring equipment without breaching clause 16.5 regarding tampering.¹⁶⁷⁹</p> <p>The AER does not consider that it is necessary to amend clause 16.5. Its meaning is sufficiently clear and it considers that including an exhaustive list (if this were possible) may be counter-productive as events not contemplated in that clause may arise.</p> <p>The AER is satisfied that this and the remaining sub-sections of clause 16 are consistent with the NGR and the national gas objective.</p>	<p>Amendments 14.21, 14.22, 14.23 and 14.24.</p>

1677 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 10.

1678 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 10.

1679 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 11.

<p>access</p> <p>Clause 16.5 – No tampering with measuring equipment</p> <p>Clause 16.8 – Right to alter measuring equipment</p>		
<p>Meter Data Service</p> <p>Clause 17</p> <p>Clause 17.1 – Meter data service offered as a reference service</p> <p>Clause 17.5 – No warranty</p> <p>Clause 17.6 - Scope of liability</p>	<p>See chapter 14, sections 12.2.4 and 14.2.17 of the draft decision..</p>	<p>Amendments 14.3 and 14.29.</p>
<p>Metering requirements where user does not take a meter data service</p> <p>Clause 18</p> <p>Clause 18.2 – User to provide daily meter reading facilities at demand customer delivery points</p>	<p>AGL submits that clause 18.2(b) should be amended to permit for the timetable and the data format within which the user is to provide daily meter readings to be determined by negotiation.¹⁶⁸⁰</p> <p>The AER does not consider that it is necessary to amend clause 18.2(b). In coming to this view the AER has considered that Jemena has a commercial imperative that may drive its timetable and the necessary data format.</p> <p>The AER is satisfied that this clause 18 is consistent with the NGR and the national gas objective.</p>	<p>None.</p>

1680 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 15.

Allocation Clause 19	No submissions were received on clause 19. The AER is satisfied that Jemena's proposed clause 19 is consistent with the NGR and the national gas objective.	None.
Charges Clause 20	No submissions were received on clause 20. The AER is satisfied that Jemena's proposed clause 20 is consistent with the NGR and the national gas objective.	None.
Allocation of tariff classes Clause 21	See chapter 12 of the draft decision.	None
Invoicing and payments Clause 22 Clause 22.1 Service provider to issue invoice Clause 22.3 Due date of payment Clause 22.6 Disputed payments Clause 22.8 Overcharging and undercharging	AGL, Origin and TRUenergy made submissions on clause 22. ¹⁶⁸¹ The AER considers that clause 22.1, 22.3 and 22.6 are a continuation of current commercial obligations and are consistent with the NGR and the national gas objective. The AER notes its comments above that when the NECF is finalised Jemena may apply to the AER under r. 65 of the NGR to seek a variation to the access arrangement, if this is required. In relation to clause 22.8, see chapter 14, section 14.2.18 of the draft decision.	Amendment 14.25.
Goods and services tax	AGL submits that clause 23.6 is a new clause. It sets out the process for applying adjustments. AGL	None.

1681 AGL, *Submission to the AER*, 10 November 2009, appendix, pp. 16–19; Origin, *Submission to the AER*, 10 November 2009, pp. 2–3; TRUenergy, *Submission to the AER*, 11 November 2009, p. 2.

<p>Clause 23 Clause 23.6 – Adjustments</p>	<p>submits that where there is an adjustment event, the adjustment note must be issued as soon as the party becomes aware of the adjustment event.¹⁶⁸²</p> <p>The AER considers that the clause 23.6 is clear in its requirements regarding adjustments and the obligation on the supplier to issue an adjustment note to the recipient as soon as the supplier becomes aware of the adjustment event.</p> <p>The AER is satisfied that Jemena's proposed clause 23 is consistent with the NGR and the national gas objective.</p>	
<p>Suspension of service Clause 24 Clause 24.3 – No liability</p>	<p>In relation to clause 24 see chapter 14, section 14.2.5 and 14.2.17 of the draft decision.</p>	<p>Amendment 14.8 and 14.28.</p>
<p>Interruptions and curtailments Clause 25 Clause 25.2 – Scheduled interruptions Clause 25.4 – Load shedding</p>	<p>In relation to clause 25.2 see chapter 14, section 14.2.15 of the draft decision.</p> <p>AGL submits that: (i) the concept of commercial resolution should be inserted into clause 25.4; (ii) failure of sufficient supply should be defined and clearly linked to an emergency/critical situation; (iii) that clause 25.4(c)(ii) should refer to STTM procedures; (iv) that mechanisms provided by the STTM or the market should be carved out from clause 25.4 so that load shedding is truly a last resort mechanism; (v) and that the timeframe for the giving of notice by Jemena should be tightened.¹⁶⁸³</p> <p>The AER considers that clause 25.4 and the operational requirements set out in section 1.1 of schedule 6 of the access arrangement are sufficiently clear as to the requirements of users in relation to load shedding. The AER notes that Jemena can make an application to the AER to vary Schedule 3 of the access arrangement proposal to take account of finalised STTM procedures if required. The AER is satisfied that Jemena's proposed clause 25.4 is consistent with the NGR and the national gas objective.</p>	<p>Amendment 14.26.</p>
<p>Force Majeure</p>	<p>AGL submits that: (i) clause 26.1(a)(viii) should be deleted and the clause altered to reflect 'prudent</p>	<p>None.</p>

1682 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 19.

1683 AGL, *Submission to the AER*, 10 November 2009, appendix, pp. 20–21.

<p>Clause 26</p>	<p>network operations'; (ii) clause 26.1(a)(vii) should be deleted as matters relating to network breakdowns are often within the service provider's control and not a good example of a force majeure event.¹⁶⁸⁴</p> <p>The AER considers that the definition of force majeure in clause 26 suffices. The AER is satisfied that Jemena's proposed clause 26 is consistent with the NGR and the national gas objective.</p>	
<p>Termination or cessation</p> <p>Clause 27</p> <p>Clause 27.2 – Right of service provide to terminate</p> <p>Clause 27.3 – Failure to pay</p>	<p>In relation to clause 27.3 see chapter 14, section 14.2.16 of the draft decision.</p> <p>AGL submits that there is no reference within clause 27.2(b) that requires Jemena to refer any disputes to the AER and that the clause is silent on materiality.¹⁶⁸⁵</p> <p>The AER considers that clause 27.2 sets out of Jemena's right to terminate sufficiently clearly and does not limit the application of clause 32 relating to dispute resolution. The AER is satisfied that Jemena's proposed clause 27.2 is consistent with the NGR and the national gas objective</p>	<p>Amendment 14.27.</p>
<p>Liability</p> <p>Clause 28</p> <p>Clause 28.4 – scope of liability</p> <p>Clause 28.6 – circumstances in which limitations and exclusions do not apply</p> <p>Clause 28.7 – contribution to loss or</p>	<p>See chapter 14, section 14.2.17 of the draft decision. This matter was also considered at the Round table discussion on non-tariff issues.¹⁶⁸⁶</p> <p>AGL submits that both parties should have a responsibility to maintain appropriate insurance. AGL requests a new clause 28.4(c) that 'clause 28.4(b) does not apply to the extent that the service provider has failed to effect and maintain the insurances reasonably expected to be held by a prudent network operator or has failed to take all reasonable steps to recover insurance proceeds under its insurances.'¹⁶⁸⁷</p> <p>Jemena stated at the Round table discussion on non-tariff issues that it has a licence requirement to have prudent insurance.¹⁶⁸⁸ The AER considers that this legislative obligation is sufficient and no amendment is required to clause 28.4.</p>	<p>None.</p>

1684 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 23.

1685 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 23.

1686 AER, Minutes of roundtable discussion on terms and conditions, 27 November 2009, pp. 16–20.

1687 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 24.

1688 AER, Minutes of roundtable discussion on terms and conditions, 27 November 2009, p. 18.

damage		
Transfer Clause 29 Clause 29.2 – No assignment without consent	<p>EnergyAustralia submitted that clause 29.2 should be amended so that Jemena’s written consent to the assignment, transfer or novation of the agreement must not be unreasonably withheld or delayed.¹⁶⁸⁹</p> <p>The AER considers that the clause sets out the requirements sufficiently. The AER does not consider that EnergyAustralia’s proposed amendment is required. The AER is satisfied that Jemena’s proposed clause 29.2 is consistent with the NGR and the national gas objective.</p>	None.
Security and financial standing Clause 30	<p>AGL submitted that clause 30 should be amended to provide the user with the ability to request a review of credit support and also include the scenarios when Jemena can apply credit support.¹⁶⁹⁰ EnergyAustralia submitted that Jemena should have the obligation to review and adjust the amount of security required from the user at the request of the user.¹⁶⁹¹</p> <p>The AER considers that the requirements of clause 30 in relation to security and financial standing from users are a reasonable commercial discretion required by Jemena. The AER is satisfied that Jemena’s proposed clause 30 is consistent with the NGR and the national gas objective.</p>	None.
Confidentiality Clause 31	<p>AGL submits that clause 31(a) is redundant by virtue of 31(b) as clause 31(b) requires disclosure by ‘applicable laws’ and requests its deletion.¹⁶⁹²</p> <p>The AER considers that clause 31 is clear in relation to the obligations on Jemena and the user in relation to confidentiality and that AGL’s proposed amendment is not required. The AER is satisfied that Jemena’s proposed clause 31 is consistent with the NGR and the national gas objective.</p>	None.
Dispute resolution Clause 32	<p>No submissions were received on clause 32.</p> <p>The AER is satisfied that Jemena’s proposed clause 32 is consistent with the NGR and the national gas objective.</p>	None.

1689 EnergyAustralia, *Submission to the AER*, November 2009, pp. 3–4, 13–21, 27–41.

1690 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 25.

1691 EnergyAustralia, *Submission to the AER*, November 2009, p. 12.

1692 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 25.

Notices Clause 33	No submissions were received on clause 33. The AER is satisfied that Jemena's proposed clause 33 is consistent with the NGR and the national gas objective.	None.
General Clause 34	No submissions were received on clause 34. The AER is satisfied that Jemena's proposed clause 34 is consistent with the NGR and the national gas objective.	None.
New clauses	<p>AGL and EnergyAustralia submit that various new clauses should be inserted into Schedule 3 of the access arrangement proposal and the access arrangement proposal. They submit:</p> <p>(i) that the access arrangement must contain terms and conditions which are fair and reasonable.¹⁶⁹³ The AER considers that the NGL and NGR already provide for equal treatment of parties. It does not consider that the amendment is required.</p> <p>(ii) that a new clause should be inserted into Schedule 3 of the access arrangement proposal defining the communication protocol between a user and Jemena regarding planned interruptions and disconnections.¹⁶⁹⁴ The AER considers that the protocol described is outside the scope of Schedule 3 of the access arrangement proposal and that clause 25 sufficiently outlines the requirements of the user and Jemena in relation to interruptions and does not propose to require the amendment.</p> <p>(iii) that a new clause should be inserted into Schedule 3 of the access arrangement proposal defining the format of exchanges of information between the user and Jemena regarding customer details or the introduction of a B2B process.¹⁶⁹⁵ The AER does not consider that such a clause is required as the format of exchange of information can be negotiated by the service provider with each individual user and does not propose to require the amendment.¹⁶⁹⁶</p> <p>(iv) that a new clause should be inserted into Schedule 3 of the access arrangement proposal defining the</p>	

1693 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1694 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1695 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1696 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 26.

	<p>information that the user must provide to Jemena for each new distribution supply point which the user wishes to be connected.¹⁶⁹⁷ The AER considers that clause 11 of Schedule 3 of the access arrangement proposal sufficiently outlines the access requirements for new delivery points and does not propose to require the amendment.</p> <p>(v) that a new clause should be inserted into Schedule 3 of the access arrangement proposal which provides the protocol for complaint handling which defines the interaction between the user and Jemena.¹⁶⁹⁸ The AER considers that this can be separately negotiated between Jemena and a user and does not propose to require the amendment.</p> <p>(vi) that a new clause should be inserted into Schedule 3 of the access arrangement proposal which defines that a party must promptly notify the other party if it reasonably believes that a person is committing or has committed theft of gas from the distribution system and the other party may be affected by the theft.¹⁶⁹⁹ The AER considers that such a clause is not required as normal police reporting obligations of theft are sufficient and does not propose to require the amendment.</p> <p>(vii) that a new clause should be inserted in relation to high bill enquiries meter investigations require Jemena to remove the meter to conduct an investigation. However AGL submits that the timeframe should be defined in a new clause.¹⁷⁰⁰ The AER considers that a new clause is not required as each investigation will have a different timeframe and does not propose to require the amendment.</p> <p>(viii) that a new clause should be inserted into Schedule 3 of the access arrangement proposal that defines the interaction process for notices to the other party.¹⁷⁰¹ The AER considers that the interaction process for notices to the other party does not need to be defined in Schedule 3 of the access arrangement proposal and does not propose to require the amendment.</p> <p>(ix) there are omissions from Schedule 3 of the access arrangement proposal relating to accuracy of meter</p>	
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1697 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1698 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1699 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1700 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1701 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1702 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

1703 AGL, *Submission to the AER*, 10 November 2009, appendix, p. 27.

	<p>data, meter testing, meter reading and the correction of reading errors. AGL recommends extensive amendments to include meter reading requirements.¹⁷⁰² The AER considers that clauses 16, 17, 18 and 22.6 are sufficient requirements in relation to meter reading and correction of errors and does not propose to require the amendment.</p> <p>(x) that timeframes and service levels are required around actioning, completion and notification to users regarding ancillary services in Schedule 2 of the access arrangement. See section 14.2.2 of the draft decision.</p> <p>(xi) concerns around the obligations on the service provider regarding fault and emergency services in relation to communication to users, updates to users and the general public.¹⁷⁰³ The AER considers that relevant legislative obligations on Jemena are sufficient and detailed provisions are not required in Schedule 3 of the access arrangement proposal. The AER does not propose to require amendment.</p>	
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F. Submissions

The AER received submissions on Jemena's proposal from the following entities:

AGL Energy Ltd

AgroEco Systems Pty Ltd

Australian Pipeline Industry Association Ltd

CSR Building Products Ltd

Energy Networks Association Ltd

EnergyAustralia

EnergyAdvice

Energy Markets Reform Forum

Energy Users Association of Australia

Financial Investor Group

Jemena Gas Networks Ltd

Origin Energy Retail Ltd

Qenos Pty Ltd

Queensland Hunter Gas Pipeline Pty Ltd

TRUEnergy Pty Ltd

Glossary

Acronym/Initialism	Extended form
AAG	access arrangement guideline
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACG	Allen Consulting Group
ACIL	ACIL Tasman Pty Ltd
ACT	Australian Capital Territory
ActewAGL	ActewAGL Distribution
AGL	AGL Energy Ltd
AGLGN	AGL Gas Networks
AEMO	Australian Energy Market Operator
AMA	Asset Management Agreement
APIA	Australian Pipeline Industry Association Ltd
ATO	Australian Taxation Office
A&O	administration and overheads
BoM	Bureau of Meteorology
CAPM	capital asset pricing model
CCGT	combined cycle gas turbine
CEG	Competition Economics Group
CGS	Commonwealth Government Securities
CSR	CSR Building Products Ltd
CPRS	carbon pollution reduction scheme
DFA	Dimensional Fund Advisers
DNSP	distribution network service provider
DRP	debt risk premium
EBA	enterprise bargaining agreement
EGP	Eastern Gas Pipeline — this is owned by Jemena Ltd and transports gas from the Gippsland Basin in Victoria to markets in Sydney and regional

	centres
EGW	electricity, gas and water
EMRF	Energy Markets Reform Forum
ENA	Energy Networks Association Ltd
EnergyAdvice	EnergyAdvice Pty Ltd
ESF	enterprise support functions
EUAA	Energy Users Association of Australia
FFM	Fama–French three-factor model
FIG	the Financial Investor Group
FTE	full time employee
GDP	gross domestic product
GFC	global financial crisis
GJ	gigajoules (equal to 1 000 000 000 joules)
GPG	gas-powered generation
HDD	heating degree days
HML	high minus low
IRR	internal rate of return
ISR	industrial special risk
IT	information technology
ITAA	Income Taxation Assessment Act
JAM	Jemena Asset Management
Jemena Group	The Jemena Group includes all entities that are wholly or partially owned by SPI (Australia) Assets Pty Ltd, which is a wholly owned subsidiary of Singapore Power International Limited Pte Ltd.
JGN	Jemena Gas Networks Limited
JIA	Joint Industry Associations
KPI	key performance indicator
LME	London Metal Exchange
LRMC	long run marginal cost

MDQ	maximum daily quantity
MHQ	maximum hourly quantity
MRP	market risk premium
MSCI	Morgan Stanley Capital International
MSP	Moomba to Sydney Pipeline — this is owned by the APA Group and links the Cooper Basin gas fields at Moomba with distribution networks in Sydney and regional New South Wales. The pipeline includes laterals to Canberra and regional centres including Lithgow and Griffith
MTN	medium term notes
NCC	National Competition Council
NECF	National Energy Customer Framework
NEM	national electricity market
NEMMCO	National Electricity Market Management Company
NER	National Electricity Rules
NERA	NERA Economic Consulting
NIEIR	National Institute of Economic and Industry Research
NPV	net present value
NSW	New South Wales
NYMEX	New York Mercantile Exchange
NZCC	New Zealand Commerce Commission
Origin	Origin Energy Retail Ltd
O&M	operating and maintenance expenditure
PB	Parsons Brinckerhoff Australia Pty Ltd
PJ	petajoules
POTS	packaged off-take station
PRS	primary regulating station
PTRM	post-taxation revenue model
PwC	PricewaterhouseCoopers
Qenos	Qenos Pty Ltd

QHGP	Queensland Hunter Gas Pipeline
QLD	Queensland
RBA	Reserve Bank of Australia
RBSM	risk and benefit sharing mechanism
RET	renewable energy target
ROLR	Retailer of last resort
SA	South Australia
SCADA	supervisory control and data acquisition
SEO	seasoned equity offerings
SFG	Strategic Finance Group Consulting
SMB	small minus big
SPI	Singapore Power International
SPL	Sydney primary loop
SPM	service performance measure
STTM	short term trading market
TJ	terajoules (equal to 1000 gigajoules)
TFP	total factor productivity
Tribunal	Australian Competition Tribunal
TRUenergy	TRUenergy Pty Ltd
UAG	unaccounted for gas
UBS	Union Bank of Switzerland
WACC	weighted average cost of capital
WAPC	weighted average price cap
WBH	water bath heaters
WOBCA	whole of business cost allocation
